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ABSTRACT

Developed as one part of the "Learning by Design" environmental education program, this compilation of resource information and materials serves as a guide to current environmental education projects, curriculum materials, books, people and organizations. Designed as a system rather than a one-time publication, the information in this document will be updated annually through a subscription service. The preface describes the relationship between architects and environmental education, the role of the American Institute of Architects (AIA), and the entire "Learning by Design" program. Part I, "Models", examines seven exemplary environmental education programs. Each entry includes basic features, program description, historical development, and sample activities. The "Resources" section contains descriptions, representative illustrations and sample activities (when appropriate) for 29 commercially available publications. Part III, "Bibliography," lists 36 annotated entries. The last section, "Networks," provides a listing of people and organizations currently involved in environmental education. Forms are provided for making suggestions for future entries for each of the sections. (DC)

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the Sourcebook

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Learning by Design

The Environmental Education Program of The American Institute of Architects

SE 036 370

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The Sourcebook, *like the entire "Learning by Design" program, has grown out of the continuing efforts of many people. To the environmental education coordinators in the fifty states, the hundreds of teachers, administrators, architects and educational resource people who answered our inquiries and submitted to follow-up interviews, a thanks for their excellent recommendations of resource materials. I hope* The Sourcebook *reflects their concerns and meets some of their needs.*

A special thanks goes to the material selection panel, David Kennedy, Joanne Pratt, Alan Sexton and Bruce Webb, who sat for several long days locked in a room pouring over books, games, kits and activities, sorting out the selections for The Sourcebook. *Their patience and judgment are greatly appreciated. Thanks, too, to Twig George for assisting in the gathering and collecting of materials.*

The people central to the development of The Sourcebook, *responsible for its research and writing, are Kirk and Jack Hershey, without whose tremendous knowledge of the subject matter and overall view this project would have never begun. A special contribution was made by Bill Hammond without whose guidance this project could not have continued. Editorial and graphic design were completed with the sensitive touch of Alicia McGinley and Scott Miller, with the assistance of Deborah Larkin.*

The AIA Public Education Steering Committee added steadying hands to the overall project. I wish to thank Ken Filarski, Larry Garvin, Frank Haines, Jim Lammers, and Jim Lawler.

Special acknowledgement is due those who assisted in the production of The Sourcebook, *Cheryl Byerly, Ed Kelsey, and Jeri Yancey.*

Alan R. Sandler
Director
Public Education

October 1981

The Sourcebook *is the key publication in the new environmental education program of The American Institute of Architects, Learning by Design. This publication offers a range of useful reference materials for educators looking for real-world activities applicable for the lower grades through high school.*

The Sourcebook *is more than just this binder.* The Sourcebook *is a system of information about current environmental education projects, activities and curriculum materials. This information system will be updated annually through a subscription service that will ensure that* The Sourcebook *will be of lasting and ongoing value.*

The Preface describes the relationship between architects and environmental education, the role of the AIA and the entire AIA environmental education program, "Learning by Design."

"Models" is an in-depth look at exemplary environmental education programs. Each analysis includes a description of the program and a discussion of the program's developmental process.

"Resources" is the core of The Sourcebook, *featuring fold-out pages, each describing an outstanding, commercially available publication. The description of the materials captures the flavor and viewpoint of each resource through commentary, visual materials and, where appropriate, a brief activity.*

"Bibliography" is an annotated list of selected background reading materials for the use of educators and students.

The last section of the book, "Network," contains a listing of people and organizations who are currently involved in environmental education and are available for assistance.

Preface

Architects and Environmental Education

Architecture is only one of the many forces affecting the environment, but it is one of the most important. Today's architects are concerned with environmental education because they are concerned with achieving and preserving quality in the environment. For this to happen on a meaningful scale in the United States, there must be a widespread public expectation and demand for quality in the environment.

Aware citizens can make better choices. They require buildings designed to a human scale, streets designed for safety, furniture designed to fit the human body, classrooms designed for learning, parks designed for rest and recreation and public buildings designed to express the values of the community.

This human-designed environment is the architect's particular area of domain. What is built, why it is built and where it is built are all a part of the profession's responsibility. The architect, in collaboration with the client, strives to achieve an architecture of consequence. Architecture has a personal and often dramatic effect on everyone. The architect relies on the public's participation and interest in the design process, for it is that interest that stimulates the architect to achieve work of significance. The public should be an educated participant.

No other art form so completely pervades our daily lives. We live, work, study and play in our buildings. Our surroundings affect our moods and temperaments; certain buildings, parks, plazas and streets lift our spirits, others diminish them. If we are to influence our architecture—and its lasting effects—we must embark on a strong and pervasive environmental education effort.

Role of The American Institute of Architects

The American Institute of Architects (AIA) is the national organization of the architectural profession, established in 1857. The AIA fulfills the basic goals of maintaining the standards and competence of architects. The following statement from its Bylaws gives clear expression of the ideals of the profession:

> "The objects of The American Institute of Architects shall be to organize and unite in fellowship the architects of the United States of America; to combine their efforts so as to promote the esthetic, scientific, and practical efficiency of the profession and building industry by advancing the standards of architectural education, training, and practice; to coordinate the building industry and the profession of architecture to insure the advancement of the living standards of our own people through their improved environment; and to make the profession of ever-increasing service to society."

Membership in the AIA is open to every architect licensed to practice in the United States. Currently, the membership of the AIA is composed of approximately 30,000 licensed architects in over 200 local chapters. The Institute's national office is in Washington, D.C.

Since 1966, the AIA has been involved in environmental education—working on the national level to help clarify issues and develop methods and materials for raising the public consciousness of this vital issue. The AIA has been instrumental in providing the general public—and especially school-age children who will become decision-makers as adults—with a better understanding of the factors that influence the nature of its physical surroundings. Our objective has been a thoughtful citizenry, equipped with skills and values, taking reasoned action necessary to shape cities, towns and countrysides into better places to

live, and remaining active in efforts to ensure that these will continue to be better places in the future. That is why architects, both individually and collectively, have supported environmental education and have become activists deeply involved in environmental education. Participants have taken many roles: legislative activists, theorists, consultants, architect/educators, community workshop organizers and civic speakers.

The group within the AIA that carries on this task has been known variously as the Task Force on Primary and Secondary Education, the Elementary and Secondary Education Committee, the Environmental Education Committee and, most recently, the Public Education Committee. Its primary objective has not altered: "To create an awareness of and concern for the human-designed environment as it relates to the total environment among all education sectors, pre-kindergarten through adult education."

In this role of environmental education catalyst, the AIA has developed several resources and services through the efforts of this committee. Informational materials for teachers introduced the need for integrating human-designed environmental concerns into the classroom. Information bibliographies were developed, with the first in 1970. Active support of effective legislation establishing environmental education at both the federal and state levels has been pursued.

Then, in 1980, the AIA conducted a survey to determine the needs of the education community in environmental education. Over 900 persons were contacted throughout the country, including state environmental education coordinators, primary and secondary school teachers, education administrators, graduate faculty of architecture and education, textbook publishers, representatives of nonformal education sectors—including television, children's magazines and museums—AIA components and Public Education Committee members. The overall response rate across all sectors of the survey was more than 50 percent.

The most significant findings of the survey indicated the critical need for access to high quality environmental education resource material, particularly instructional and activity guides, and training that would demonstrate how to integrate human-designed environmental education into existing curricula.

Faced with these findings and determined to meet these needs, the AIA Public Education Committee embarked upon an intensive period of planning which included consultation with professional representatives from the formal and nonformal education sectors. What emerged from these discussions was the structure of a system of interrelated material resources, the mechanisms for delivering these components and, perhaps most important of all, a conceptual framework—the basic notions—upon which the program would rest. The program has been entitled "Learning by Design" and surpasses all previous AIA environmental education activities, both in scope and in substance. The ultimate goal of this program is for every student to develop the ability to live in harmony with the natural environment and the skills to design a quality human environment.

Learning by Design

"Learning by Design" has five key elements: the conceptual framework, information resources, a workshop program, an action program and an information and technical assistance network.

The Conceptual Framework
Basic to the program is the articulation of the concepts and ideas that constitute its knowledge base. This framework explores the relationship between the human-designed environment and the total environment. It integrates the human-designed and natural dimensions of the en-

vironment and synthesizes the dynamics of environmental systems with those of human perception, values and behavior. The concepts are offered neither as a mandate nor as a new course of study, but rather as an approach for blending environmental principles into existing instructional programs.

Information Resources
In order to answer the needs indicated by educators for information about existing materials, The Sourcebook *has been developed and disseminated. This publication is a compendium of information about existing programs, currently available teaching materials and persons and organizations that are vitally involved in environmental education activities. It is the centerpiece of the informational aspect of this program.*

Workshop Program
The workshop program, conceived as a partnership between school representatives and architects, explores ways to make the human-designed environment accessible to students. This program features active collaboration between architects and educators in the development of new learning strategies and activities for classroom use.

Action Program
To meet the needs of teachers and architects in the classroom, the action program develops and disseminates activities. The development of learning strategies and guidelines, the testing of environmental education models, the development of an environmental education guidebook to local resources, and the production of classroom activities in a variety of formats are the major functions of this component.

Information and Technical Assistance Network
To ensure the widest dissemination of information related to environmental education newsletters, reports, position papers, presentations, and response to requests for materials and assistance are ongoing functions of the program, as is participation in meetings, seminars and workshops held by public and private organizations.

"Learning by Design" is a comprehensive approach to education for a quality environment. Educators will develop an enhanced perception of their surroundings and translate this into practical activities for their students. Architects will become a resource to involve students and educators in exploring the design process for decision-making. Together we will develop this program to create a demand for environmental quality.

Models

Seven model programs have been selected for this first edition of The Sourcebook *to exemplify the diversity of approaches to environmental education. All of the programs, however, are alike in their efforts to connect learners directly with the environment, for, in each case, the immediate environment is regarded as the major text and primary vehicle for learning.*

These selections span a broad range of environmental settings, instructional opportunities, grade levels, and subject areas, and represent a variety of sponsors. To demonstrate the nature and quality of each program, each model describes program components, developmental history, specific program applications, and sample activities.

The current selections are:

Beaumont, USA
A seventh-grade combined history and art course on local architectural heritage taught in public and parochial schools in Beaumont, Texas, developed jointly by the Beaumont Art Museum and the Heritage Society.

Investigating Your Environment
A kindergarten through twelfth grade multidisciplinary series of modular lesson plans for exploring local environments, developed and disseminated by the US Forest Service.

Minnetonka Built Environment Interdisciplinary Project
Seventh through twelfth grade units and coursework on the principal dimensions of the built environment, through history and into the future, designed by teachers for a local school system on a ESEA Title IV-C grant in Minnetonka, Minnesota.

OBIS Outdoor Biological Instructional Strategies
Fourth through ninth grade activity modules for learning about a variety of natural environments in non-school settings, developed and tested by Lawrence Hall of Science at Berkeley (Berkeley, CA), and available through a national network of training centers, the ERIC system, and a commercial publisher.

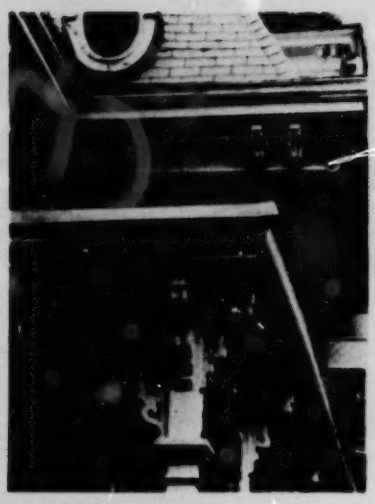
Project KARE
An interdisciplinary kindergarten through twelfth grade program that organizes local environmental problem-solving projects, originated by intermediate units in a five-county area in southeastern Pennsylvania, and now distributed through the National Diffusion Network of the US Department of Education.

Project Learning Tree
A kindergarten through twelfth grade program in the natural and social sciences for learning about our earth's resources and societal values; training and supplemental activity guides are available through the American Forest Institute and co-sponsoring state agencies.

Street Smart
A kindergarten through eight grade multi-media program on the nature and history of street environments, developed and tested by Vision, Inc., the Center for Environmental Design and Education, in Cambridge, Massachusetts.

This selection of model programs will be expanded with each edition of The Sourcebook. *If you want to recommend a program for this section, send the initial information on the reply card in the back of this book, or write Alan Sandler, Public Education, The American Institute of Architects, 1735 New York Avenue, NW, Washington, DC 20006-5292.*

Beaumont USA



History Through Architectural Heritage

CLOSE-UP

As a final project for the Beaumont, U.S.A. *program, students at Bowie Junior High documented an historic building—The Sanders Home—one of the few remaining buildings from the original 1890's townsite of Beaumont. The documentation of this Queen Anne style building enabled students to study not only the architectural style of that period but the technology, economics, and social patterns associated with it.*

Photography, drawings, measurement, on-site analysis, and written documentation were coordinated through student teams aided by several professional persons who offered their support and guidance. The results of their labors were sent to the Library of Congress to the Registry of Historic Places.

At the start of the project, the Sanders Home faced an uncertain future, as the last historic structure in a fast-changing neighborhood. However, through the students' thorough documentation and the publicity their efforts received, the fate of the Sanders Home is now secure.

Beaumont USA

History Through Architectural Heritage

BASIC FEATURES

Beaumont, U.S.A. provides an innovative aproach to the teaching of American and local history through the study of architecture and environmental awareness. Designed as a supplement to the eighth-grade history curriculum, *Beaumont, U.S.A.* employs the local community and its architecture, to give students a better understanding of history and the process of historical investigation.

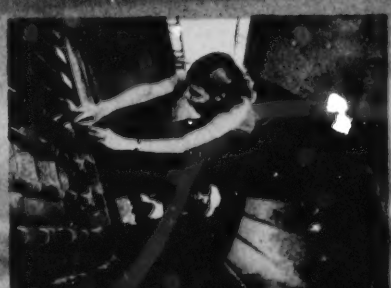
The program places particular emphasis on architecture as a fine art with a valuable history unto itself, reflecting the influence of the Beaumont Art Museum and the Beaumont Heritage Society. Local buildings are used to teach about different architectural styles and the downtown area is approached from aesthetic, historical, and functional perspectives.

After the students have developed an appreciation for local architecture and an understanding of the history it represents, they are encouraged in their final projects to participate in the preservation of their local heritage, the improve-

PROGRAM DESCRIPTION

Beaumont, U.S.A. was designed as an eighth grade program to supplement American history and arts curricula. The seven-month program revolves around a handbook, written by Janet Krulick, Project Director for *Beaumont, U.S.A.* and Curator of Education at the Beaumont Art Museum, and the Beaumont Heritage Society staff. The handbook is divided into five chapters, corresponding to the monthly units covered by the teachers and the trained docents from the Museum and the Heritage Society. Each chapter combines factual material about architecture, local history, and historic preservation with a variety of activities for individual and class use.

The first unit, "Discovering Architecture," introduces the concept of the built environment and architecture as a fine art embodying the elements of space, human scale, structure, decoration, and design. This material can be presented in several ways. During the pilot year, teachers chose various approaches (a picture collage, a giant mobile



architect focused on the basic concept—"Form Is Shaping Force," illustrating how a building's form affects its use and, therefore, the people who use it. Docents presented activities on personal space.

The second unit, "What Is Style?" introduces world and American architecture as reflected in Beaumont, using the school and individual and downtown neighborhoods as outdoor classrooms for discovery. Each of the pilot classes adapted this unit differently. One class did an in-depth study of American Colonial architecture. Another researched the Southern plantation, using the data for their final project. A third studied the different styles in both the school and museum neighborhoods. All the classes did an intensive study of the Art Deco style of the Jefferson County Court House and coordinated it with their unit on the judicial system.

The next unit, "History: It's Just a Matter of Time," emphasizes the built environment as it surrounds each person and relates the environment to the American timeline, local history, and personal history. The students in the pilot were made aware of their personal histories as a first step toward appreciating the concept of an historic environment. Classes completed series of historic timelines, studied their neighborhoods' changes, and viewed slide programs on Beaumont's architectural history as well as a special program on Texan cities entitled, "Main Street, Texas."

"Downtown Beaumont," centers on walking tours that examined building and street usage, architectural styles, and future improvement plans. Inquiry focuses on what factors contribute to the demise of downtown areas and what can be done to revitalize urban centers. In the pilot program, particular attention was paid to the downtown mall then under construction. Students from one school became so involved in the process that they addressed City Council on the issues of revitalization and the importance of merchant participation in planning.

"Spare Beaumont" focuses on the importance of preservation to Beaumont. Using the SPARE Beaumont Survey (Beaumont's architectural inventory), the students learn preservation strategies such as, how to complete National Register application forms, how to work with local restoration sites, and how to

PROGRAM DEVELOPMENT

Beaumont, U.S.A. developed out of a joint effort by the Beaumont Art Museum and the Beaumont Heritage Society to integrate the study of local history and architecture. In addition to the resources of both of these institutions, support was provided by the Beaumont City Schools System, the Texas Commission on the Arts, the Southeast Texas Arts Council, and the Mobil Foundation, Inc.

During its pilot year (1979–80) the program was introduced as a major component of the eighth-grade Arts Related Curriculum, an Arts-In-Education program recently integrated into the city's school system. Four schools were involved with the program. Eighth-grade American history classes were selected, based on the intention to teach American history through the study of architecture and the built environment. Eight teachers and 130 students were involved that first year.

Art and history teachers coordinated activities in each participating school. Six specially trained docents from the Art Museum and the Heritage Society visited each of the participating classes once or twice a month. The art and history teachers supplemented these visits with activities from the handbook, additional lessons written by the program staff, and ideas developed during the six in-service workshops during the year. The architect-in-residence visited each classroom monthly and more frequently during the final project period.

In-service training workshops were held on a regular basis and two all-day workshops were conducted. Every month the teachers received release-time to plan the schedule for the architect and docents, field trips, and program content. Special presentations were made by restoration architects, members of the Heritage Society, and the architect-in-residence.

In the second year of the Beaumont program, the same teachers were involved, the architect-in-residence received continued funding, and four museum volunteers were added. Having gone through the pilot year, the teachers took on more of the responsibility for covering each month's chapter of the handbook with their students, making field trip arrangements, showing the monthly film selection (a new feature), and integrating the material into their lesson plans. Teachers also attended monthly lecture-workshop sessions with the docents and museum staff to plan, review, and learn new material.

In 1980–81 the docents were required to attend monthly workshops with all of the program participants as well as separate monthly training sessions with the program director and architect-in-residence. At these training sessions, the activity packets developed by the architect were reviewed so the docents could conduct these activities with the students during that month. Occasionally, docents would schedule additional class visits of their own. As the docent's role expanded, the architect was able to spend more time in the classroom during the final project phase and visit each classroom more frequently during the year to present more technical material. He also enlisted the volunteered help of other professional architects in the community.

The success of the Beaumont program appears to be based on three critical factors: the collaboration of the Art Museum and the Heritage Society, which produced a blend of expertise and resources and balanced the administrative load; the practical nature of the educational program, which engaged students in active explorations of their community and its architectural heritage; and the commitment and enthusiasm of the local architect-in-residence, who worked closely with students and teachers as well as docents and project administrators.

House Hunt #1

Find one building that interests you and fill in the necessary data.

Location of building_____

How many floors?_____

DOORS How many?_____ Are there fanlights?_____ Transom?_____

compatible forms of architecture

This program makes use of multiple resources: a well-researched and carefully organized handbook, history and art teachers, museum docents, resident architects, volunteer community resource people, community institutions such as the Beaumont Art Museum and the Beaumont Heritage Society, and the built environment of Beaumont itself.

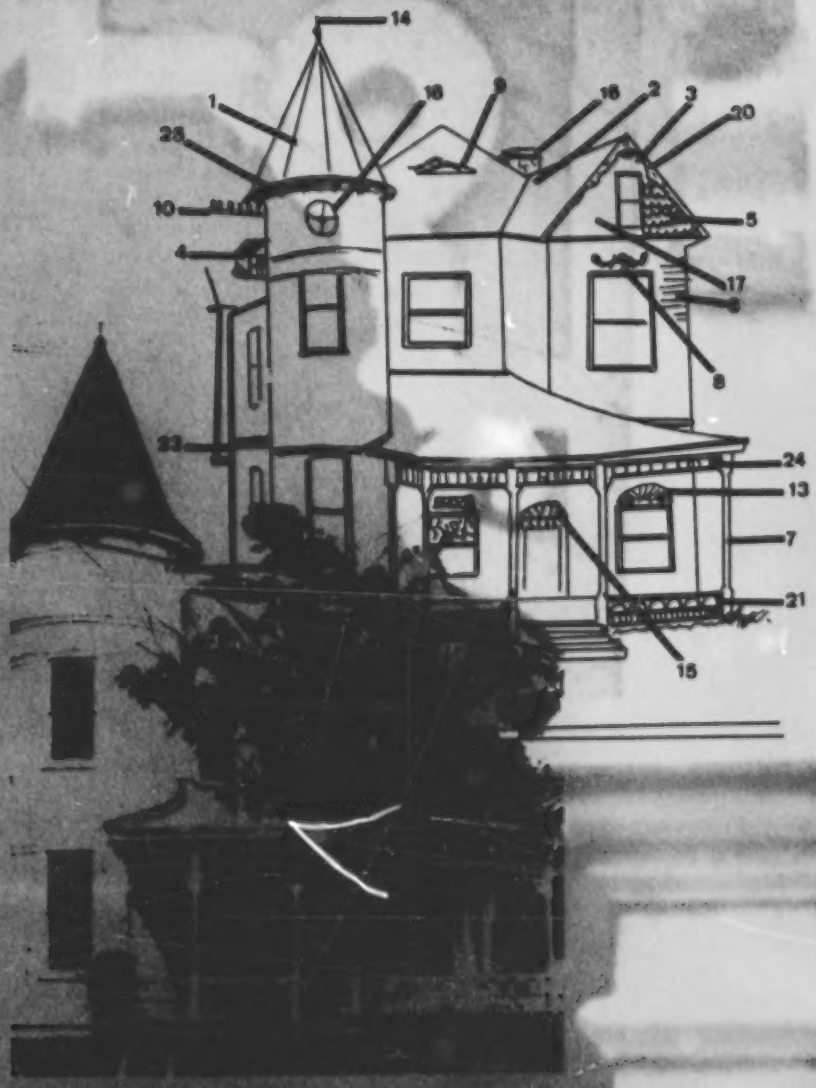
Beaumont, U.S.A. is a particularly fine example of the convergence of community resources for the development of environmental education opportunities and of effective linkage between cultural institutions and the school system.

Beaumont, U.S.A. is of further significance as an example of integrating a well-constructed educational program—and in this case, one that required coordination between eighth grade art and history courses—into an existing school curriculum.

Finally, *Beaumont, U.S.A.* serves as a fine model for making history and the built environment particularly relevant to the lives and interests of its students. Through a handbook that continually relates concepts and events to the individual student's frame of reference and through the use of students' neighborhoods and the community for experiential learning, *Beaumont, U.S.A.* goes a long way in making tangible connections between the past and present and between the student, school, and community.

screapbooks, etc.). The resident

Rick Campbell



conduct feasibility studies.

During the final phase of the seven-month program the professional architect-in-residence works intensively with the students in their classrooms. Specific class projects are chosen at this point. Some of the pilot projects included the following: redesign of a classroom; design and construction of a wooden deck and surrounding landscaping; documentation of a nineteenth-century Gothic building listed on the National Register of Historic Places but facing an uncertain future; research and construction of a scale model of a Southern plantation; design of an exhibition structure; photographic study of downtown architecture; documentation of an early twentieth century office; building before and through demolition; design of children's dollhouse.

Sidelights?_____Carved lintels?_____Double doors?_____

Single door?_____ Wood?_____Painted?_____Door Knocker?_____

Letter slots?___Pediment?_____Type of front porch?_____

Other Decoration?_____

WINDOWS How many?_____Shapes?_____

Are they all the same size?_____How many panes are there in each window?_____Any stained glass?_____

Fanlights?_____Sidelights?_____Shutters?_____

Arches?_____Pediments?_____Lintel Shape?_____

Other decoration?_____

ROOF Shape?_____Brackets?_____

Bargeboard?_____Turrets?_____Dormers?_____

Roof covering material?_____Finials?_____

Other decoration?_____

MATERIALS Make a list of all the building materials that you can see.

_____ _____

_____ _____

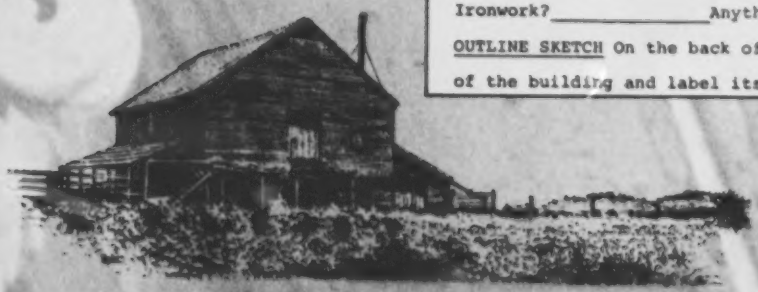
_____ _____

If brick, what type of bonding was used?_____

OTHER FEATURES Balconies?_____Ornamental woodwork?_____

Ironwork?_____Anything else?_____

OUTLINE SKETCH On the back of this sheet make an outline sketch of the building and label its different parts.



TITLE: **Beaumont, U.S.A.: Our Built Environment**
A Handbook for Students, Teachers, and Docents

AUTHOR: Janet Krulick, Curator of Education

INSTITUTION: Beaumont Art Museum and Beaumont Heritage Society

GRADE LEVEL: Originally intended for 8th graders; highly adaptable

RESOURCE TYPE: Handbook for students, teachers, and docents

SUBJECT AREAS: Art, art history, architecture, local history

TOPICS COVERED: Architecture, architectural style, history, historic preservation

SETTING FOR USE: Classroom, community, local museums

INFORMATION:
Janet Krulick
Beaumont Art Museum
1111 Ninth Street
Beaumont, TX 77702

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Investigating Your Environment

Exploring Local Environments

CLOSE-UP

In 1975, the Arkansas Department of Education adopted this program as part of its environmental education training. For the past six years, the state has sponsored in-service teacher workshops three or four times a year. Some of the lesson plans have been tailored for elementary and high school teachers. A special resource book, Reading the Environment, *relates directly to the state and its special environment and is available to accompany the training workshops and for use in school and on student field trips.*

A lesson plan was designed in 1979 especially suited to elementary and junior high school teachers. Entitled, "The Urban Environmental Study Investigation," this lesson plan involves a process of urban scoring. Small teams investigate the town and annotate several subjective and objective dimensions. Street interviews are conducted as well. The teams later regroup and synthesize their findings into a comprehensive assessment of the condition and nature of their town. Over 2,000 of these lesson plans have been distributed through the Arkansas workshops.

Bill Fulton, environmental education coordinator for the Arkansas Department of Education has commented, "We know this urban scoring works. We've gotten excellent feedback from teachers who continue to use the lesson plan with their students. It is so simple that virtually anyone can do it. . . . One of our workshop directors, a biologist, has gotten turned on to architecture through this and other urban investigations. He's out photographing buildings with the rest of them."

Investigating Your Environment

Exploring Local Environments

BASIC FEATURES

Investigating Your Environment Series (IYE) is a nationally disseminated environmental education program sponsored by the Forest Service and cooperating agencies. *IYE* is easily the most effective and best received contribution of a Federal agency to environmental education. The series triggered the "investigative approach," in which the involvement of the educator in a mutual learning experience with the student and the environment is emphasized in place of ritualized classroom teaching.

This program is primarily available through its decentralized workshop plan that relies largely on cosponsoring associations around the country: colleges and universities, local and state environmental education associations, special interest groups, and state departments of education and natural resources.

While training is not required in order to use the materials, the investigative approach can best be

PROGRAM DESCRIPTION

The Forest Service's *Investigating Your Environment Series* is one of the longest standing and most widely distributed environmental education program in the country. When it began in 1968 as a regional program in the Pacific Northwest, it represented a radically new process approach to outdoor education and nature study. Today, *IYE* stands as an exemplar in the broad field of hands-on, action-oriented, environmental education programs.

IYE offers processes and techniques for exploring different dimensions of the natural and man-made environment. The investigations actively engage participants in observing the environment and in collecting, recording, and interpreting data about that environment. The facts and figures obtained, however, are not ends in themselves. The emphasis of *IYE* is on the process of learning about the environment; the questions are at least as important as the answers. As an alternative to lecturing and show-

direct, indirect, etc.) among the topics under study; and *summary tasks* to synthesize findings.

The inquiry method of teaching and learning is emphasized in the training workshops where participants are encouraged to examine their own teaching methods; educational objectives; classroom and field trip strategies; and learning processes. (The key to this approach can be understood best through the "Lesson Plan for Developing Environmental Investigations.")

Materials are primarily in the form of lesson plans for investigations in soil, water, forest, urban environments, animals and their habitats, the human community, land use and management. The lesson plans vary in format from outdoor investigations to simulations and games. There are additional teaching materials such as lesson plans for "A Process and Problem Solving Approach to Environmental Education," "Identifying Some Techniques of Group Involvement," and "Developing Environmental Investigation." Depending on the

PROGRAM DEVELOPMENT

The *Investigating Your Environment Series* began in 1968 in the Pacific Northwest regional office of the Forest Service. Through the inspiration of Ernie McDonald, conservation specialist in Portland, a new process approach to environmental education took shape in a workshop program and investigative teaching materials. *IYE* represented a departure from the traditional educational efforts of the Forest Service, and after three years the program was adopted nationally by the Forest Service.

In the first four years of national distribution, close to 24,000 teachers, administrators, resource managers, and elected officials were trained through *IYE* workshops. Since then it has been estimated that over 100,000 people have participated in the workshops, who in turn have brought the learning process back to their schools, agencies, and organizations.

There have been many kinds of co-sponsors for the program: colleges and universities, local and state environmental education associations, special interest groups, state departments of education and natural resources, and federal agencies such as Bureau of Land Management, the National Park Service, US Fish and Wildlife, and even the US Navy.

Some of the highlights of the program to note are:

Over 100 colleges and universities offer the *IYE* workshop for credit to pre-service and in-service teachers.

IYE is offered statewide in Arkansas, West Virginia, and Indiana for teacher accreditation.

In Montana, the Montana Environmental Education Service Association (MEESA) was formed expressly to implement the program.

In Kansas, a similar organization (KsCEE) conducts the program through the state's Department of Natural Resources.

In Alabama, the *IYE* workshop has been mandatory for all employees of the Alabama Forestry Commission.

The National Council of State Garden Clubs adopted the program nation-wide and offers a certified program under its own instruction.

In approximately five years ago, the

INVESTIGATING YOUR ENVIRONMENT SERIES

A LESSON PLAN FOR URBAN ENVIRONMENTAL STUDY AND RECOMMENDATIONS

Set the stage for this investigation by reviewing quickly what will take place in the allotted time. For example: In the next _____ days we will be studying the environment of _____ (town) by conducting an Urban scoring and interviewing local citizens to determine the strong and weak points of the town. Then we will make recommendations intended to improve the town's environment.

I. COLLECTING DATA

Divide the participants into at least 3 groups who will conduct Urban Environmental Scores, and at least 1 group who will conduct the Urban Environmental Interviews. (see attachments)

Select ahead of time 3 different areas in the town for the Urban Environmental Score groups to walk and score. They are to score individually on their walk and and on completion of the walk they are to average their results and prepare a 5 minutes report.

The Urban Environmental Interview group armed with a number of interview sheets should stateion themselves in shopping areas, banks, etc and conduct short man-on-the-street interviews. They should agree on a time to meet and tally their results for a 5 minute report.

TASK A: (1 day) Collect the appropriate data for your group by walking your assigned area and taking tissue rubs, counting litter, etc. or by interviewing local citizens. Use the forms at the back of the lesson plan.

II. REPORTING TO THE GROUP

TASK B: Prepare a 5 minute reaprt of your group's findings to be presented to the entire group. Make use of visuals and any other innovated ideas you can come up with in your report. Include in your report interesting high and low scores or interviews.

TASK C: (5 minute) Tally the results of the scores and interviews.

What are the strong points of _____ town?
What are the weak points of _____ town?
List these on the board.

III. PLAN OF ACTION AND RECOMMENDATIONS

TASK D: (30 minutes) Each group is to develop at least one recommendation for improving the local community. Under the recommendation identify targets, constraints responsibilities and strategies. Each group should limit its presentation to 5 minutes.

SUMMARY QUESTIONS

What can we say about this local community's environment?
How can we summarize our discussions and recommendations?

TASK E: What are some additional questions or activities that should be added to the Urban Score?

What are some additional questions or activities that should be added to Urban Interviews?

BEHAVIORAL OUTCOMES:

As a result of these activities, you should be able to:
Rate the Urban Score as 20 - 44 bad; 45 -75 average; 76 - 100 good.
Rate the Urban interviews as 12 - 20 bad; 21 - 29 average; 30 - 36 good.
Make recommendations for improving the local community.

EQUIPMENT NEEDED:

Urban Scores and Interview forms and cameras (optional)

This lesson plan was developed by Training Resources in Environmental Education T.R.E.E. Contributors; Bill Fulton, Arkansas Department of Education, Little Rock, Dean Jones, Springdale Public Schools and Arnold Hearn, U.S. Forest Service, Mountain View. 1979

URBAN ENVIRONMENTAL SCORE

CIRCLE ONE	NUMERICAL SCORE				
1. How would you rate the particulate matter in the air?	DIRTY 1	2	SOME 3	4	CLEAN 5
2. Do you see any exhaust from vehicles or chimneys?	VERY EVIDENT 1	2	SOME 3	4	NONE 5
3. Look at the litter in 5 different locations in your	DIRTY		SOME		CLEAN

tures. It [illegible] out as a Federal program relatively free of red tape. It is made available through all sorts of channels. The regional and national offices of the Forest Service continue to be flexible and responsive, their primary goal being to make the program available.

This is also one of the first environmental education programs to make the transition from the strictly natural science orientation to a more comprehensive view of the environment and the role people play in its condition and use. The urban investigations provide some of the best learning opportunities for students in their own human habitat.

required active interaction between the learners and their environment.

The program itself is multi-faceted hinging, in its current form, on a two-tiered workshop training program. The Forest Service sponsors a three- to five-day workshop for individuals and team facilitators in each region of the country during which future workshop leaders are trained in environmental investigations. These persons are then able to train classroom teachers and youth group leaders in *IYE* in their own communities.

The "interpretation of data" process (adapted from the work of the Northwest Regional Education Laboratory) is the basic framework for the investigations. This process teaches individual interpretation of environmental data; involving four basic kinds of activities: *open-ended tasks* that involve a group of people in collecting a large amount of data; *focusing activities* that direct the group to specific topics and investigations; *interpretive analysis* that examines the relationships (causal,

ests of its co-sponsor, [illegible] materials are provided that are tailored to the specific site or to the region.

Each lesson plan organizes one or more investigations related to a general topic. They are generally self-explanatory, providing instructions, recommendations, planning guides, materials and equipment lists, timing, results expected, and so forth. Also included are task cards which provide specific activities for individual and small groups. The lesson plans are used in the training workshops as general guides or sample investigations. Participants are encouraged to develop their own versions, tailored to their students interests, the surrounding environments, and their particular background.

U.S. Forest Service

shop program.

Today, regional offices of the Forest Service continue to co-sponsor workshops. The current emphasis, however, is on facilitator training in which future leaders learn how to run teacher training workshops. In this way, the Forest Service has been able to continue effective dissemination of the program and maintain a degree of quality control without substantial program costs.

Materials are available directly from the Washington, DC office of the Forest Service, as well as from the regional offices. However, differences exist within the Forest Service as to whether the materials should be distributed without training experience. The workshop is the key ingredient to the program, and, while the materials are significant and useful, the teaching/learning processes of the training workshops are the core of the program. It is relatively simple to co-sponsor an *IYE* workshop; however, the procedures vary from region to region. The Forest Service brings a spirit of flexibility and accommodation to *IYE*. For those interested in participating in a training workshop, it is suggested that the regional office of the Forest Service or the state coordinator of environmental education (associated with either the Department of Education or the Department of Natural Resources) be contacted.

4.	How does your area smell?	YUCK 1	2	3	4	GOOD 5
5.	Count the number of litter deposits in your area	LOTS 1	2	3	4	LITTLE 5
6.	Rate the general noise level	LOTS 1	2	3	4	LITTLE 5
7.	Rate the graffiti in your area	LOTS 1	2	3	4	LITTLE 5
8.	Does your area have trees?	LOTS 1	2	3	4	LITTLE 5
9.	How healthy are the trees?	SICK 1	2	3	4	HEALTHY 5
10.	Rate the general condition of the buildings	NEED REPAIRS 1	2	3	4	GOOD 5
11.	Would you like to live or work in these buildings?	NO 1	2	NO FEELINGS 3	4	YES 5
12.	Is your area.....	DECLINING 1	2	STATIC 3	4	IMPROVING 5
13.	Is there evidence of historic preservation in your area?	NO 1	2	SOME 3	4	YES 5
14.	Are the spaces around or between the buildings inviting to people?	NO 1	2	3	4	YES 5
15.	Is there any evidence of design or a plan in your area?	NO 1	2	3	4	YES 5
16.	How much electrical energy is being used?	EXCESSIVE 1	2	3	4	CONSERVATIVE 5
17.	Is use being made of sunlight and/or shade effectively in your area?	NOT AT ALL 1	2	3	4	VERY GOOD 5
18.	How much insulation do you think is being used in your area?	NONE AT ALL 1	2	3	4	WELL INSULATED 5
19.	Rate the car size in your area	FULL SIZE 1	2	MIDDLE 3	4	SUBCOMPACT 5
20.	Rate condition of public facilities- schools, churches hospitals, etc.	BAD 1	2	AVERAGE 3	4	GOOD 5

TOTAL CIRCLED NUMBERS:_____

20 - 44 bad
45 - 75 average
76 - 100 good

TITLE: **Investigating Your Environment**

INSTITUTION: Forest Service,
US Department of Agriculture

GRADE LEVEL: K–12, adult

RESOURCE TYPE: Teacher training workshop program and investigative guides, lesson plans, teaching aides

SUBJECT AREAS: Sciences and social sciences

TOPICS COVERED: Land use, land management, towns and communities, air, soil, water, forest, wildlife habitat, simulation gaming, lesson plan preparation, group involvement techniques

PRODUCTS: Investigator and teacher training workshops and teaching materials. Lesson plans and activities dealing with over fifty topics are available regionally.

INFORMATION:
Regional offices of Forest Service
also,
Coordinator Environmental Education Program
Forest Service, US Department of Agriculture
PO Box 241
Washington, DC 20013

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Minnetonka Built Environment Interdisciplinary Project

Building For Tomorrow's Community

CLOSE-UP

George Terauds, an industrial arts instructor at Minnetonka High School has been involved with the Built Environment Multidisciplinary Project *since its inception.*

Terauds teaches the seven-day "Structures" section of the senior-high "Building Your Environment" course. He involves students in energy efficient housing designs, heating systems, and special design projects.

The senior-high course was developed in the second year of the Minnetonka project. Terauds and three other teachers spent a month that summer developing the course curriculum. One discipline is designed to build on another; the social studies teacher for example, presents the social dimensions of the urban environment which Terauds is able to enhance with more technical information on urban infrastructure and land development.

This course typifies the Minnetonka project in general, as it provides hands-on experiences and direct contact with environment. "It does not offer the ordinary, run-of-the-mill learning experience," Terauds notes. "In one three-day period students used an aerial-view photograph of a 60-acre lot and an area map to develop a plan for a sub-division. Each student designed a plan for one homework assignment. The next day they broke into groups and pooled their work to develop group plans. At the next class meeting, they used a 4' × 4' sand box to develop models of the area. This course is one of the few truly interdisciplinary courses where different subject areas are integrated simultaneously. Sometimes the students end up with a lot to absorb at one time, but it's worth the risk of overloading them. If they get only half the message, they will have learned a great deal. After all, they are the ones who will have to solve the problems of energy and environment in the future."

Minnetonka Environment Interdisciplinary Project

Building For Tomorrow's Community

BASIC FEATURES

Minnetonka Built Environment Multidisciplinary Project is a curriculum development project supported by Title IV funding. Over a three-year project period, thirty teachers from diverse disciplines have developed twenty curriculum units in environmental education and implemented the units in the two junior high schools and one senior high school of the Minnetonka School District.

The *Minnetonka Project* represents one of the most comprehensive multidisciplinary efforts by one school district to develop and imple-

PROGRAM DESCRIPTION

The *Minnetonka Built Environment Multidisciplinary Project* has provided students in the Minnetonka School District with a unique set of academic and cultural opportunities to learn about the built environment. Twenty curriculum units (that range from one to eighteen weeks in length) have been developed by thirty Minnetonka teachers of art, science, home economics, social studies, math, and industrial education.

The specific objectives of the program were to enable students to identify and measure the effects of

PROGRAM DEVELOPMENT

Four years ago, after an in-service workshop, several teachers from various disciplines talked about their mutual interest in hands-on, practical activity units on energy and the built environment. As of the summer of 1981, a Title IV project, bears comprehensive twenty to eighty week units of instruction have been developed and used throughout the Minnetonka Junior and Senior High Schools in Minnetonka, Minnesota.

The *Minnetonka Built Environment Multidisciplinary Project* is a testimony to the potential for individual school districts to develop and implement environmental education programs. As one of fifteen successful applicants for Title IV funding of innovative curriculum projects in 1978, the Minnetonka project received follow-up funding for the last two years of their three-year effort.

The overall objective of the project—to foster awareness and knowledge of the built environment and its present and future impact on society—was generated by two factors. Teachers and curriculum specialists at Minnetonka recognized that the students were not being exposed to other environments and lifestyles beyond their own protective suburbia, and, about the same time, the fact that students had few school opportunities to explore future issues had become apparent. Thus, a multi-disciplinary curriculum was developed to supply future decision-makers with the tools to create and maintain a better quality of life as well as the skills and knowledge necessary to take an active role in shaping the communities, towns, [illegible]

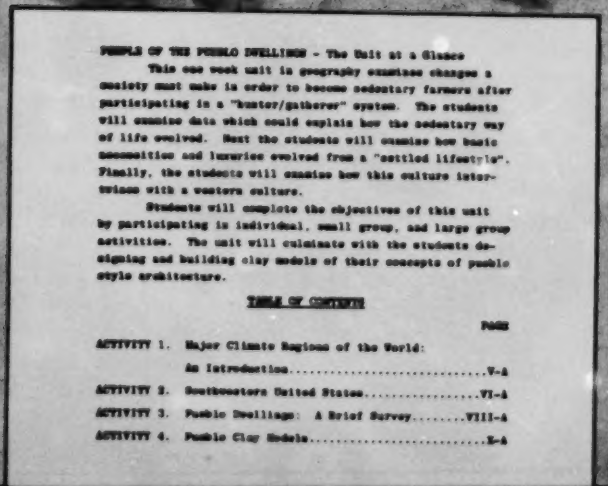
Thirty teachers were involved in the development of curriculum units in science, industrial education, mathematics, social science, consumer living and art. Through pre-school and in-school workshops, the materials were disseminated to other teachers in the district. The units [illegible] its to and from [illegible] such as architects, [illegible] urban planners, [illegible] were, in addition, field tested by the University of Minnesota's Architecture Department. [illegible] development areas, the Home, Energy and Building Show, energy businesses, and construction sites.

In addition to the nineteen multi-disciplinary curriculum units developed by the Minnetonka teachers, a full-year elective course in the future of the built environment, "Building Your Future," was offered in the third year of the project. By spring 1981, over 600 students across the district had been exposed to this environmental education program (approximately half of each year's graduating class). About 70 percent of the teachers involved in the original curriculum design continue to teach the material in their classes.

The project units have met with varying degrees of acceptance. The Energy Flow unit is now part of a required ninth-grade science course. The Architectural Design course has substantially increased its subscription as an elective. Fundamental drafting [illegible] are still taught but [illegible]

[illegible] the units have met with universal acceptance, but [illegible] most units continue to be used in the curriculum of the two junior high schools and senior high in the district. Resource persons have all agreed that their involvement in the project will continue beyond the funded period. Minnetonkan teachers found that professional persons were flattered by requests to participate and were more than happy to bear their own expenses if necessary.

[illegible] the [illegible] busing [illegible] the one area [illegible] continuing district support most needed in the coming years.



PEOPLE OF THE PUEBLO DWELLINGS - The Unit at a Glance

This one week unit in geography examines changes a society must make in order to become sedentary farmers after participating in a "hunter/gatherer" system. The students will examine data which could explain how the sedentary way of life evolved. Next the students will examine how basic accomodation and luxuries evolved from a "settled lifestyle". Finally, the students will examine how this culture interviews with a western culture.

Students will complete the objectives of this unit by participating in individual, small group, and large group activities. The unit will culminate with the students designing and building clay models of their concepts of pueblo style architecture.

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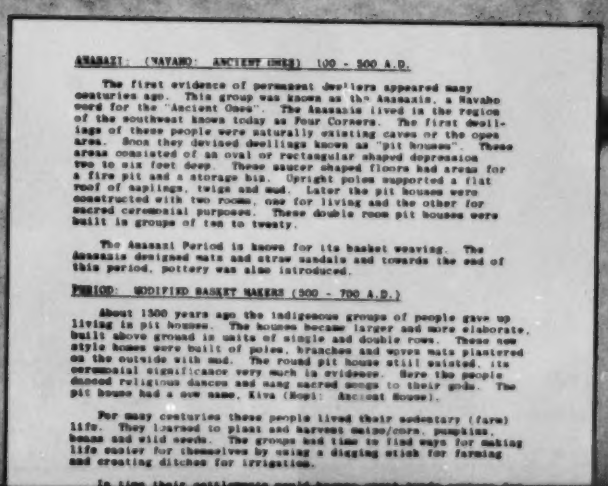

ANASAZI: (NAVAHO: ANCIENT ONES) 100 - 500 A.D.

The first evidence of permanent dwellers appeared many centuries ago. This group was known as the Anasazis, a Navaho word for the "Ancient Ones". The Anasazis lived in the region of the southwest known today as Four Corners. The first dwellings of these people were naturally existing caves or the open area. Soon they devised dwellings known as "pit houses". These areas consisted of an oval or rectangular shaped depression two to six feet deep. These saucer shaped floors had areas for a fire pit and a storage bin. Upright poles supported a flat roof of saplings, twigs and mud. Later the pit houses were constructed with two rooms, one for living and the other for sacred ceremonial purposes. These double room pit houses were built in groups of ten to twenty.

The Anasazi Period is known for its basket weaving. The Anasazis designed mats and straw sandals and towards the end of this period, pottery was also introduced.

PERIOD: MODIFIED BASKET MAKERS (900 - 700 A.D.)

About 1500 years ago the indigenous groups of people gave up living in pit houses. The houses became larger and more elaborate, built above ground in units of single and double rows. These new style homes were built of poles, branches and woven mats plastered on the outside with mud. The round pit house still existed, its ceremonial significance very much in evidence. Here the people danced religious dances and sang sacred songs to their gods. The pit house had a new name, Kiva (Hopi: Ancient House).

For many centuries these people lived their sedentary (farm) life. They learned to plant and harvest maize/corn, pumpkins, beans and wild seeds. The groups had time to find ways for making life easier for themselves by using a digging stick for farming and creating ditches for irrigation.

In time their [illegible]

ment teaching about the many dimensions of the built environment.

Through the internal curriculum design efforts, teachers of art, social studies, science, math, language arts, industrial education and home economics came together and contributed to an integrated approach to built environmental education. These cooperative endeavors reinforced a more interdisciplinary approach to teaching and exploring the human habitat.

The *Minnetonka Project* has developed a network of resource persons in the community to support the project through in-class and field presentations. The project has also exposed students from homes with above-average incomes to other environments and has fostered inquiry regarding future environments.

Minnetonka Curriculum Units
(title, subject area, grade level)

Land Use, science, grades 7–9
Solar vs. Electrical Heating, science, grades 9–12
Energy Flow, science, grades 9–12
Water and Man, science, grades 8–12
Biology and the Built Environment, science, grade 12
Infrared Radiation, science, grades 9–
Heat and Home Heating, science, grades 11–12
Screen Printing for the Built Environment, industrial ed., grades 10–12
Architectural Studies, industrial ed., grades 9–12
Careers in Built Environment, [illegible], industrial ed., grades
[illegible], industrial ed., grades
Energy Conservation, Energy Awareness,
12

present social and cultural lifestyles and to make informed projections about future effects; to increase their knowledge of architectural design and construction concepts; and to demonstrate an increased awareness of careers in architecture, planning, engineering, and design. It was also intended to foster a more positive attitude among teachers toward interdisciplinary approaches to teaching built environment topics.

The core components of the project have included the curriculum development phase and the coordination of resource persons and field trips. The topic for the curriculum units grew out of a curriculum [illegible] that focused on structures, energy, and transportation. Across all the units, several subtopics have been emphasized: [illegible], population, environmental q[illegible], land-use priorities, [illegible]e, aesthetics, careers, [illegible]tems.

[illegible] cour[illegible]
[illegible]
tonka project. Four basic [illegible] explored: energy, urbaniza[illegible] and [illegible]. [illegible] studied in [illegible] four subject areas [illegible]ies, industrial [illegible] consumer living sk[illegible] ical and future p[illegible] used throu[illegible].

Each to[illegible] four-week [illegible] for the intro[illegible] sixte[illegible] in[illegible] o[illegible] stu[illegible] sectional rotation, the unit concludes with a field trip and a presentation by a resource person. This pattern is followed for each of the four units and culminates in general synthesis.

and the Plains' indigenous cultures to the east. These people by nature were peaceful.

GOLDEN AGE (1050 - 1300)

The people of the pit houses lived for centuries in peace. Warlike people of the north, the ancestors of the Navahos and Apaches, invaded their villages. They did not know how to grow food, weave blankets, or make pottery. If they wanted any of these things they raided the villages and took what they wanted by force. The villages, not constructed of sturdy materials, were hard to defend. In order to survive, the villagers would have to build

Built Environment Multidisciplinary Project

Activity Title:

Activity 3. Pueblo Dwellings: A Brief Survey

Activity Description and Teaching Strategy:

The students will read a brief survey on the history of pueblo styled dwellings. The reading will cover the development of ancient pueblo dwellings to the Golden Age (1000-1300). Highlights include a brief discussion on migrations of prehistoric man, early pueblo dwellings, mature pueblo dwellings and "offshoot" developments from pueblo style living (metates and manos).

This reading proceeds sequentially. A brief discussion of timelines and western civilization events may aid some students in understanding sequencing. The following is a possible timeline which the teacher could present to the entire group. Later, a parallel pueblo dweller's timeline could be drawn for comparison. See next page.

Student Learner Outcomes:

1. The students will become aware that a unique form of lifestyle was needed by people who decided to inhabit the southwestern portion of the United States.
2. Students will be able to use vocabulary important to the pueblo culture.
3. Students will be reading for main ideas, details and inferences and will become familiar with social studies oriented vocabulary.

Grade Level:

7

Curriculum Content Area for Infusion:

Social studies

Student Materials Needed:	Teacher Materials Needed:
History of Pueblo Dwellings	Copy of the reading, PUEBLO DWE
Copy of the the study guide	Copy of the study guide
Optional--copy of new vocabulary	Copy of new vocabulary
	Any additional source material would enhance the reading, pamphlets, posters, etc. See Appendix for further information.

The student learning activity will be described in detail above or an activity guide sheet appropriate for the activity and subject area will be attached.

Bread

TITLE: **Minnetonka Built Environment Multidisciplinary Project**

AUTHOR: Thirty public-school teachers

INSTITUTION: Minnetonka Public Schools

GRADE LEVEL: 7 through 12

RESOURCE TYPE: Curriculum units for teachers

SUBJECT AREAS: Science, industrial education, math, social science, consumer living (home ec.), art

TOPICS COVERED: Land use, energy, solar energy, water, radiation, architectural design, careers, energy conservation, history of built environment, demography, transportation, alternative lifestyles, futures

SETTING FOR USE: Classroom, studio, lab, community

PRODUCTS: Lesson plans and units for limited distribution only.

INFORMATION:
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Project KARE

Environmental Problem Solving

CLOSE-UP

Upper Dublin (Pa.) School District's environmental education activities typify Project KARE's *approach and impact on local school programs.*

Upper Dublin's water study program was in the first round of funded Local Action Programs (LAPs). In addition to the initial seed money provided by KARE *in 1972, Upper Dublin has received curriculum materials, in-service teacher training, assessment tools, testing equipment, field procedures, and continuing consultation services.*

The environmental education curriculum guides were modified and adapted for use throughout the district. The unique feature here is that the students themselves did all the curriculum development work. High school students in Upper Dublin tailored the environmental education curriculum guides for their fellow students from fourth through twelfth grade. (Adult volunteers did have a hand in adapting the K–3 materials.)

In 1974, through the leadership of Dr. Bill Ritter, District Science Coordinator, Upper Dublin Township dedicated an environmental center, Robbins Park, that had been developed by seventh through twelfth grade students in the school district's Ecology Club and has since been maintained, managed, and staffed by them. Trails and bridges were designed and built by the students during the initial planning for the park, and in 1976, in commemoration of the Bicentennial, they built a log cabin. A comfort station was recently constructed and a solar greenhouse and a Colonial crafts center are being planned. The funds for park improvements have been raised through the community glass recycling program managed by the Ecology Club.

While there continues to be active community involvement in Robbins Park, the young people are the key ingredient. A group of adult volunteers, for example, planned a wildflower garden in 1981 which was planted and tended by all the gardeners in kindergarten through third grades.

Project KARE's *commitment to local community/school partnerships and to student involvement in environmental problem solving has certainly been realized in Upper Dublin. The school district and the township, too, have made a lasting commitment to environmental education through Robbins Park.*

Project KARE

Environmental Problem Solving

BASIC FEATURES

Project KARE (Knowledgeable Action to Restore Our Environment) has been building and demonstrating a comprehensive K-12 approach to environmental studies since its inception in 1971. Operating as a support service to schools within the southeastern region of Pennsylvania, *Project KARE* has emerged as an exemplary education program featured in the National Diffusion Network.

Project KARE offers a wide range of curriculum materials in environmental education, although workshop training and consultant services are of equal significance in its approach to environmental problem solving.

KARE's success appears rooted in its conceptual grounding. There is, first of all, the conviction that curriculum innovation begins at the local level. Just as environmental education is grown and cultivated within the school, rather than handed to schools through a top-down approach.

A second facet of the project that has contributed to its effectiveness is its recognition of the importance of cooperative leadership at the local level. Emphasis is placed, from the

PROGRAM DESCRIPTION

Project KARE is a nationally validated environmental studies program funded by the U.S. Department of Education. Certified by the Joint Dissemination Review Panel of the Department of Education and the National Institute for Education, *Project KARE* is part of the National Diffusion Network that encourages local adoption of the program as a successful educational innovation.

Project KARE emphasizes a process approach to environmental education that is action-oriented and multidisciplinary. The workshop and program materials are geared to environmental problem solving, a process which originates with initial awareness of problems and requires cooperation of students, teachers, administrators, and community members. The domain of environmental problems and issues is not limited to any one discipline or biome; environmental concerns must be shared by urban, suburban, and rural constituents.

There are five basic components to the *Project KARE* activities which have been and continue to be replicated around the country. These include:

Special Projects go beyond the specific development of LAPs that [illegible] attention and consultant services involving an environmental retreat, designing interdisciplinary environmental workshop, implementing new courses [illegible] and environmental [illegible].

Environmental Education Resource Center [illegible] and equipment resources are housed. (At *KARE*, the ERIC Document [illegible] are available along with materials organized through a comprehensive environmental index; periodicals, newsletters, and pamphlets are also displayed and stored.)

Curriculum Materials developed, tested, and documented over the past twelve years that include the Curriculum Guideline series as well as two films documenting *KARE* projects and the *KARE* approach to environmental studies.

Consultant Services that include in-service training, materials design, facilities development, curriculum evaluation, site evaluation, curriculum design, needs assessment, and continuing education.

The basic vehicle for replicating *KARE* through the National Diffusion Network has been workshop training. *Project KARE* [illegible]

PROGRAM DEVELOPMENT

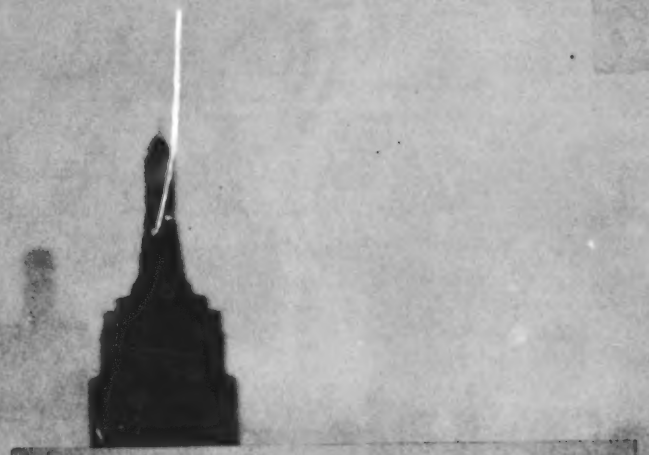
Project KARE has been sponsored since its beginnings in 1971 by the school Intermediate Units of Bucks, Chester, Delaware, and Montgomery Counties in southeastern Pennsylvania, together with the Philadelphia school district, the Roman Catholic Archdiocese of Philadelphia, and the Philadelphia Model Cities program. Over 325 schools in this region have been assisted by *Project KARE's* environmental studies grants and consultant services.

During the first four years of operation, the program concentrated on regional development of environmental studies curricula and programs. Many of the Curriculum Guidelines were written during this period and the *KARE* Resource Center was developed. The program was thoroughly evaluated by an independent evaluation firm and recommended for national validation as part of the National Diffusion Network of innovative educational programs. In June of 1975, the project became one of the first nationally validated environmental education programs. Today it is one of eight such programs.

Through the National Diffusion Network, there have been over 300 local adoptions of the program around the country from 1975 through February 1978, over 100 three-day training workshops have been conducted resulting in environmental studies programs in twenty-two states effecting nearly 90,000 students from kindergarten through twelfth grade.

The training workshops are the primary vehicle for diffusion. These three-day workshops are attended by teams of people from individual schools, including two teachers (K–12), two students, a community representative, and a school administrator. In order to adopt *Project KARE* and receive the NDN funds and services, schools must attend these workshops, develop specific environmental study skills, produce a program plan and an evaluation strategy, establish a Local Action Program (LAP), conduct learning activities which include curriculum materials from *Project KARE*, and participate in periodic evaluation processes of this approach.

Receiving a three-year program on



Department of Natural Resources

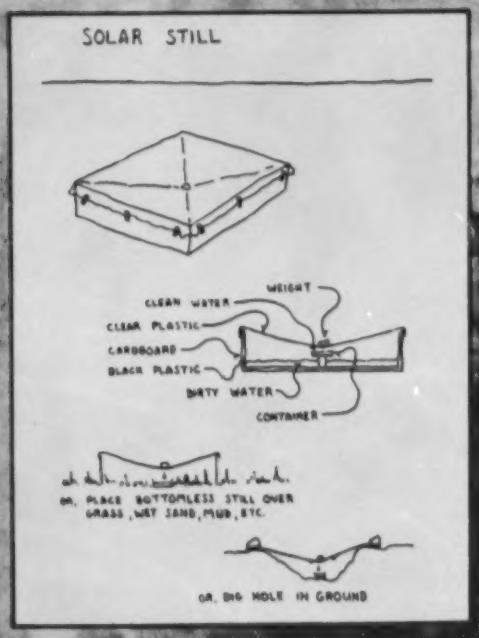
participation of students, teachers, administrators, and community members in the environmental studies program.

Project KARE appreciates incrementalism. Its approach has been to start with specific, tangible, workable projects that guarantee initial success and lead to larger and more challenging program activities.

designed by the participating schools to address particular local environmental problems, e.g. community deterioration, water pollution, solid waste management.

oped a special training module for that purpose.

[illegible] throughout the counties of southeastern Pennsylvania. Thirty-five Local Action Programs were conducted, each tailored to the interests and capabilities of the selected schools, their teachers, and students. Five teacher training workshops were also conducted. Recently, the state Department of Education has accepted "E²" as a program validated for statewide diffusion. "E²" may also be replicated in other states, although it is not as yet a part of the National Diffusion Network.



TITLE: **Project KARE (Knowledgeable Action to Restore Our Environment)**

INSTITUTION: Project KARE Montgomery County Intermediate Unit

GRADE LEVEL: K-12

RESOURCE TYPE: Program-training materials, support services, LAPs (Local Action Programs)

SUBJECT AREAS: Sciences, social sciences, art, language arts, multi-disciplinary

TOPICS COVERED: Environmental studies, economics, energy

SETTING FOR USE: School systems

PRODUCTS: Curriculum activities guides, Student workbooks, Special publications, Films.

INFORMATION:
Project KARE
Montgomery County Intermediate Unit #23
Montgomery Ave. and Paper Mill Rd.
Erdenheim, PA 19118

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OBIS

an Outdoor Learning Experience

CLOSE-UP

Dr. Ted Mills and Dr. Tom Johnsten, faculty members at a state university and coordinators of an outdoor environmental education project: "In one of the most attractive natural areas in the nation, drawing numerous family campers intent on fishing, swimming, and hiking, and with support from the University's Education Extension and the College of Education's Natural Resources and Environmental Education Center, a team of two faculty members and six students set up shop at the camping area to conduct an outdoor environmental education project.

"Using a format and philosophy similar to the OBIS *program, we conducted a series of seventy-eight two-hour sessions for family campers during six successive weekends during May, June, and July. Specific* OBIS *activities used were:* The Old White Sheet Trick, Invent a Plant, Who Goes There?, *and* Invent an Animal. *A total of 917 persons participated in the public program. Approximately half of the group consisted of families. We found a number of very encouraging results from our project. Nearly everyone learned something about the natural environment and found the activities both interesting and fun. In addition, many families felt that the activities provided the opportunity for getting to know each other better. Because participation was voluntary, it appears the public feels a need for such activities to help supplement their leisure time. Several people decided to extend their visit so they could take part in more of the activities.*

"The OBIS *philosophy and materials provided the framework for this project and were found adaptable to a diverse population. Families, young married couples, grandparents and their grandchildren, and retired couples all took part in the program."*

an Outdoor Learning Experience

BASIC FEATURES

Outdoor Biology Instructional Strategies (OBIS) provides exciting and challenging outdoor learning experiences that bring young people closer to their environment and to a deeper understanding of biology. *OBIS* emphasizes ecosystems, examining a wide variety of environmental settings and human impacts. Through the program's multiple, interactive learning strategies, community organizations, youth groups, and schools can provide young learners with direct interactions with their environment and biological information.

OBIS has several special dimensions that distinguish it from other supplemental science programs. First, it is particularly easy to use. Envisioned for non-school use, the materials are designed to accommodate a wide diversity of leader/facilitator backgrounds. All the essential substantive information and teaching concepts are included in the activity folios; thus, the activities can be handled with a minimum of preparation and background. The materials have been well received in schools as well as by community organizations because of this feature.

PROGRAM DESCRIPTION

OBIS is an educational program that takes young people outdoors to study biology and to increase their environmental awareness. The activities are designed primarily for the ten- to fifteen-year-old participant, but young and old alike have enjoyed these experiences, including such users as youth groups, community organizations, camps, churches, and schools. The activities have been enjoyed in and out of school, in single or mixed age groups, with individuals and families.

This is a program based on discovery. A variety of learning strategies—games, simulations, crafts, role playing, experimentation, data analysis—provide active learning experiences which stimulate questions about living organisms

[illegible] DEVELOPMENT

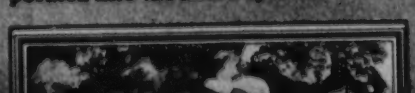
[illegible] was developed at the Lawrence Hall of Science at the University of California at Berkeley supported by a National Science Foundation grant. Since its beginnings in 1972, 100 activities have been developed, tested, and used around the world.

The development of *OBIS* activities was based on repeated trials with young people in different settings. Only after the input of numerous staff members, local teachers, and community group leaders over a three-year period were the activities printed in trial editions for further nationwide testing.

Four sets of trial editions were produced between 1975 and 1978 and distributed around the country through a network of some sixty resource centers. Today, ninety-five resource centers display and disseminate *OBIS* information, and each center conducts at least three workshops each year. In a recent survey conducted by *OBIS* it was found that in a five-year period (1975–79) 33,000 adults had participated in training workshops and over 780,000 children had used the materials. The trained adults were from community groups as well as from schools.

The activities or folios in the trial edition sets have now been further refined and reorganized into twenty-seven modules that are being produced in final form by Delta Education, Inc. Currently, seven modules (containing four to ten folios each) are available; all twenty-seven will be available by the end of 1981.

A limited number of remaining trial editions (Sets I, III, and IV and the *OBIS* Trial Module) are available from Lawrence Hall of Science through 1981. All of the *OBIS* Trial Edition materials have been incorporated into the ERIC system.



...materials were developed over a six-year period during which 780,000 young people used them in multiple field tests. Each activity was refined and revised and final selection was based on leader/teacher acceptance. Final editions are just becoming available.

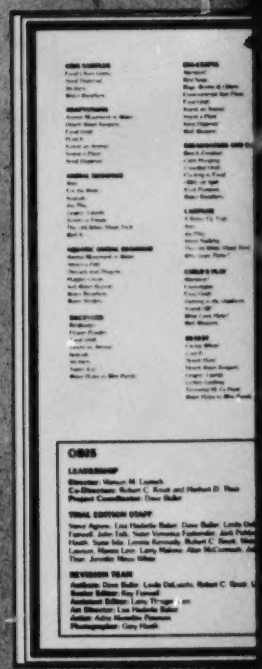
Another significant feature of *OBIS* is its adaptability. Formulated by a wide variety of people and organizations, the activities can be used singly, in combination, or in sequence. They may be used to supplement existing programs or provide the structure for a one-day workshop, a weekend program, a unit, or a course in environmental science. While particularly well-suited for ten- to fifteen-year-olds the activities have been adapted for use with much younger children, adult groups, and families.

Finally, the key ingredient for repeated and frequent use is fun, and learning is part of that experience. *OBIS* succeeds in bringing biology to life and life to biology.

and adaptation requirements, and many others. This action-oriented approach is intended to move students beyond the acquisition of observational skills to decision-making ones which future environmental issues will demand of them.

The activities can be used in various settings: schoolyards, playgrounds, streets and vacant lots, as well as in more natural settings.

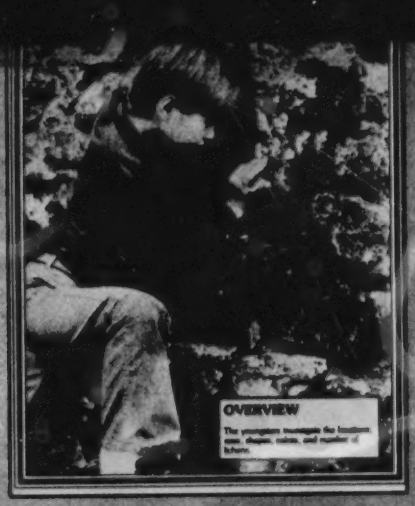
In addition to the kits, *OBIS* materials include an introductory pamphlet, "The OBIS Story," which briefly explains each activity; "OBIS Sampler," offering a selection of activities; a "Primer" and fifteen-minute color film that are guides to running workshops; the *OBIS* newsletter; and a "Resource Center Directory" that lists *OBIS* centers throughout the country.


OBIS

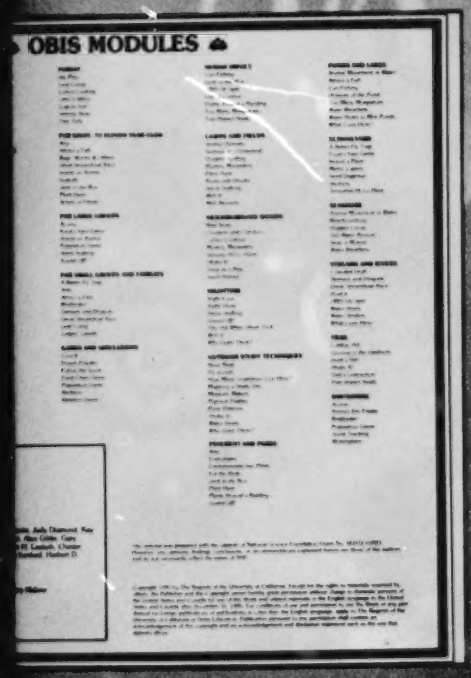
LEADERSHIP

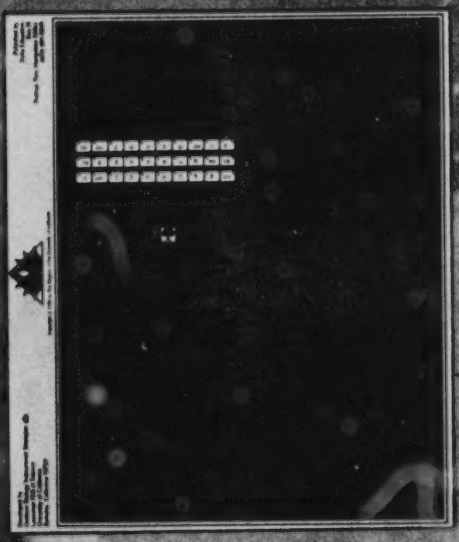
TRIAL EDITION STAFF

REVISION TEAM


OVERVIEW

CHALLENGE: GO "LICHEN LOOKING" AND INVESTIGATE THE NUMBERS, LOCATIONS, AND KINDS OF LICHENS IN YOUR AREA.


OBIS MODULES



TITLE: **OBIS Outdoor Biology Instructional Strategies**

INSTITUTION: Outdoor Biology Instructional Strategies
Lawrence Hall of Science
University of California
Berkeley, CA 94720

GRADE LEVEL: Generally 10 to 15 years of age or 4–9 w/supplemental mat'ls for 5–8 yrs

RESOURCE TYPE: Ninety-seven OBIS activities (teacher guides to each w/some student cards and materials)

SUBJECT AREAS: Biology, outdoor education

TOPICS COVERED: Animal behavior, food chains and webs, different biomes, crafts and camping (see list of modules)

SETTING FOR USE: Outdoors

PRODUCTS: (Sold by packets or individually) "Schoolyard," "Sampler," "Backyard," "Pavement And Parks," "Desert," "Bio-crafts."

INFORMATION:
Delta Education
Box M
Nashua, NH 03061

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Project Learning Tree

Learning About Natural Resources

CLOSE-UP

In 1978, Dave Woods, then a second-grade teacher, was trained in PLT *by principals and science teachers in his school district. Woods used* PLT *that year to supplement a purchased science curriculum during the last two weeks of school.*

Since then, PLT *has become absorbed into the school system in a variety of ways. Now a fifth-grade teacher, Woods teaches a three-month Environmental Unit that is based on ten* PLT *activities which incorporates other activities as well (e.g. OBIS and NSF energy education). The unit focuses on soil, air, and water beginning with sow-bugs and soil profiles and ending with land-use maps.*

Since the initial district training workshop three years ago, over 900 students have participated in PLT *activities. Every elementary teacher in the district uses the activity manuals in some fashion, primarily as supplements to the science curriculum.*

However, Woods emphasizes that the program is multidisciplinary and is particularly useful for elementary teachers who must teach language arts, science, and social studies. He further notes that the manual itself is very usable, accessible by topic, subject area, concept, and skill level. The cross-reference key is of great value to teachers who are trying to coordinate PLT *into various parts of their curriculum. The activities are also well-written, particularly for teachers with no science background. "* PLT *is very popular; everyone can do the activities," he concludes.*

Project Learning Tree

Learning About Natural Resources

BASIC FEATURES

The American Forest Institute (AFI) together with the Western Regional Environmental Education Council (WREEC) sponsor a supplemental K-12 curriculum program on environmental education entitled, *Project Learning Tree (PLT)*. AFI is a nonprofit public information and education organization representing those who grow and harvest trees and manufacture wood products. WREEC is a nonprofit educational organization that includes all of the environmental education coordinators from state departments of education and representatives from state natural resource agencies from thirteen western states.

PLT was designed to provide multidisciplinary curriculum materials for learning about forest resources; our interdependence with total forest community; and the ...ific, technological, social, ec... , and ethical factors relating to ...terdependence.

styles, providing students with a variety of ways to understand themselves and the forest community. Rather than create new curriculum and add to the teaching load, *PLT* complements ongoing programs with supplemental materials teachers can integrate into those programs.

Finally, the implementation strategy is one of *PLT*'s strongest suits. This program's delivery mechanism links training with materials and offers support to states and additional incentives to facilitators and local industry.

PROGRAM DESCRIPTION

Program Learning Tree's training workshops and supplemental activity guides are based on a curriculum framework designed around seven basic principles:

Environmental Awareness—The diverse forest environment provides a life-support system for man that serves his basic needs and desires,

PLT's reliance on values clarification does not carry with it any implicit guidance to the "right" values. There are many thought-provoking activities which present dilemmas with no easy answers. The convergence of educational, resource management and industry-minded vantage points has produced a stimulating tension throughout *PLT* that may very well be the underlying source of its enthusiastic acceptance.

There are two manuals (available only through participation in state-sponsored workshops): *Supplementary Activity Guide for Grades K through 6* and *Supplementary Activity Guide for Grades 7 through 12*. They are designed for flexible use by teachers. The specific content of the activities is broad-ranging. While there is a predominance of activities on trees, *PLT* has given significant attention to the relationship of the forest community and its resources to the urban environment and the lives of individuals and

PROGRAM DEVELOPMENT

Project Learning Tree was developed by the Western Regional Environmental Education Council with funding from the American Forest Institute. Education/Research Systems, Inc., an educational consulting firm from Seattle, Washington, coordinated the writing workshops and edited the activity guide copy. The activities and the program framework were created by elementary and secondary school teachers, curriculum specialist, school administrators, and college professors at several working sessions. These writers were helped by resource staff from state and federal agencies, the forest products industry, and interested conservation organizations (e.g. National Wildlife Federation, Sierra Club).

With the completion of the activity guides, several pilot workshops were conducted in the western states to assess the level of teacher acceptance and the performance of the materials. An independent testing organization conducted the final evaluation of the program which concluded that the workshops and materials were well received. Final revision based on the field test findings was completed at that point.

A planning and advisory council of educators, resource agencies, and industrial representatives was formed to devise an implementation strategy for the program. That strategy is guided by an AFI contractual staff of educators and has resulted in the participation of thirty states nationwide in the *PLT* program.

AFI works cooperatively with states to develop a state-wide *PLT* implementation plan. The first contact is with the environmental education coordinator of the state department of education. Together, AFI and the coordinator appoint a planning committee of leading environmental educators in that state. This committee schedules and arranges for the introductory workshop and its program, for which AFI provides an implementation grant to the state.

The workshop program is two-tiered. Special two-day workshops are conducted to train facilitators from local school districts across the states. These workshops acquaint the facilitators with *PLT* and its use in the classroom and train them to coordinate, plan, and facilitate *PLT* workshops for classroom teachers in their local school system. These facilitators then conduct six-to-eight hour "hands-on" workshops for local teachers. It is only through these in-service workshops that teachers and administrators can obtain the *PLT* activity guides free of charge.

A survey of use was conducted in the Spring of 1978 through a mail-out questionnaire to a sample of *PLT*-trained classroom teachers (K–12). Over 96 percent of the respondents indicated that they continue to use the *PLT* materials and in a variety of ways. Most frequently (61 percent) teachers select activities appropriate to their teaching program; 20 percent use *PLT* materials as the basis for instructional units; and 10 percent base a full course or total curriculum on *PLT*.

AFI plans to continue to expand the program into additional states on a regional basis. Generally, its budget allows for four new states to be introduced to *PLT* each year. But the pace will be determined by AFI's ability to continue program maintenance in those states currently participating in *PLT*. AFI also welcomes any opportunity to work with additional states who can secure their own start-up funding if during that year AFI has sufficient staff and program materials.

Finally, the implementation strategy is one of *PLT*'s strongest suits. This program's delivery mechanism links training with materials and offers support to teachers and additional incentives to facilitators and local industry.

PLT stands out as an exemplary nationwide environmental education program with several unique features. Chief among them is the successful convergence of talent from the education, natural resources, and industry communities. With the direct sponsorship by the private sector, the program has benefited from the front-end investment so necessary to program planning and development but so rarely found. And yet, rather than suffering from the biases often associated with industry-related programs, the program offers a well-balanced view of the values of our forest resources.

A second prominent feature of *PLT* is related to the time and talent provided by that front-end investment. The curriculum framework that encompasses seven basic principles and numerous corollaries was worked on extensively before the first edition and developed into a workable structure that blends the substantive focus of environmental education with a values-clarification approach (one of the first of its kind).

The educational strategy employed to convey these principles is an additional feature. The program's plan has been to supplement existing K-12 curriculum in multiple subject areas through multidisciplinary activities. The activities are tried, true, and tested. They offer a range of learning strategies suitable for diverse teaching and learning

...al, psychological, and aesthetic.

Diversity of Forest Roles—The diverse resources of the forest are closely interrelated with the environmental, economic, and sociological health of regions, countries, and the planet.

Cultural Context—The forest environment plays a role in cultural development shaping political, economic, and sociological events and behaviors over time.

Societal Perspectives on Issues—People impact the forest environment, bringing diverse interests and perspectives to bear on environmental decision and management.

Management and Interdependence of Natural Resources—The health of the forest environment and other environments is interdependent; the impact of management activities in one environment will be felt in other environments.

Life Support Systems—The earth's environment provides a life support system that is dynamic and ever changing.

Lifestyles—With knowledge of the environment, individuals can choose to evaluate and modify lifestyles in appreciation of human impacts on the environment.

Over 135 corollaries extend these principles which may be approached sequentially or separately. While they overlap in their implications and extensions, they also have their individual integrity making any one of them a starting point for the study of the environment.

In addition to the principles, there are six intellectual and valuing skills that are identified: acquisition and/or verification of information; communication; effective social (group) participation; critical thinking; creative problem solving; and valuing.

societies.

Several appendices at the back of each Guide are clearly designed to assist the teacher in making the most of each activity.

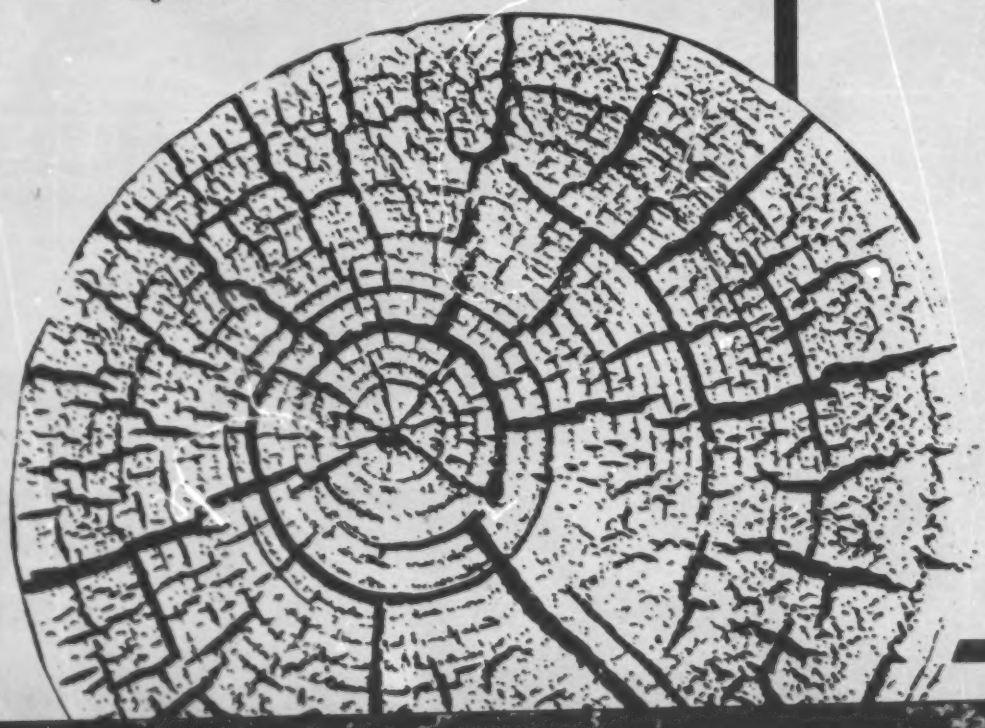
OBJECTIVE

Students will be able to perceive time from the perspective of tree growth.

ACTIVITY

Obtain a large cross section of a tree which has recently been cut. Using large map pins, mark the annual rings and connect by string to a bulletin board indicating important events in a particular year of the tree's growth. How large was the tree when the school was built? When the class entered school? When the last president of the United States was elected? When the students were born? Identify differences in sizes and spaces between tree rings. Discuss with the students various reasons for these differences (drought, lack of light, etc.).

Note: The more sophisticated the class, the greater the time span that might be dealt with in this lesson.



SUBJECTS
Social Studies
Mathematics
Science

GRADES
K-6

PLT PRINCIPLE
5. Cultural Contexts

CONCEPTS
5.3 History and Environment
5.33 Forest Influence on U.S. History

SKILL
1. Gaining Information

TITLE: **Project Learning Tree: A Supplementary Environmental Education Curriculum Program**

INSTITUTION: The American Forest Institute

GRADE LEVEL: K through 12

RESOURCE TYPE: Teacher activity guides with teacher training component

SUBJECT AREAS: Interdisciplinary : social sciences, humanities, communication arts, natural sciences, mathematics, physical sciences

TOPICS COVERED: Environmental awareness, forest roles, culture, social perspectives, natural resource management, life support systems, life styles

PRODUCTS: Teacher activity guides, newsletters, summary booklet, evaluation reports, workshop handbook, film

INFORMATION:
June McSwain, Director Education
American Forest Institute
1619 Massachusetts Ave., NW
Washington, DC 20036

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Street Smart

Learning Through the Urban Environment

CLOSE-UP

Street Smart *has been used in so many different ways that to focus on just one example does it an injustice. The following excerpts reveal the program's versatility and specific applications in a variety of settings.*

*A secondary school social studies teacher: "*Street Smart *helps me teach from my strong visual prejudice . . . (aiming) for the development of visual literacy and the awakening of students to the history which is so visibly accessible in their immediate environment."*

A program manager for several elementary schools: "Collecting data on field trips in and around the school community and using these data in the classroom to build concepts is particularly powerful as a style of learning for most elementary school-age children. This approach, as we have found in using Street Smart, *also helps to break down the artificial barriers between school and community as neighbors begin to take an interest in the youngsters' 'street studies'."*

A summer program instructor: "The projects were designed to explore and develop perceptions of the architecture and landscape. . . . We began each project with an analysis based on the charts from "Streetscape," noting materials, textures, colors, and patterns. The last three projects involved the creative process of design, with particular attention to the use of materials, textures, color, and pattern as it applied to particular buildings and to the rhythm and balance of the streetscape. Students presented projects to members of the Architecture and Planning faculty at reviews. . . . The demand for the course was incredible: we simply could not accommodate all of the students interested in the program."

Street Smart

Learning Through the Urban Environment

BASIC FEATURES

Street Smart is a multimedia program that fosters visual literacy within the immediate context of the built environment, the street scene. With sound filmstrips, posters, and activity guides, this program offers elementary and middle school students imaginative exploration through the streets where they live, inspiring pride in the heritage of their built environment and confidence in its future maintenance and enhancement.

Street Smart is a unique resource in environmental education because of its highly visual approach to learning about the built environment. The few multimedia programs that [illegible] extend primarily toward the natural environment or toward social concepts in city planning.

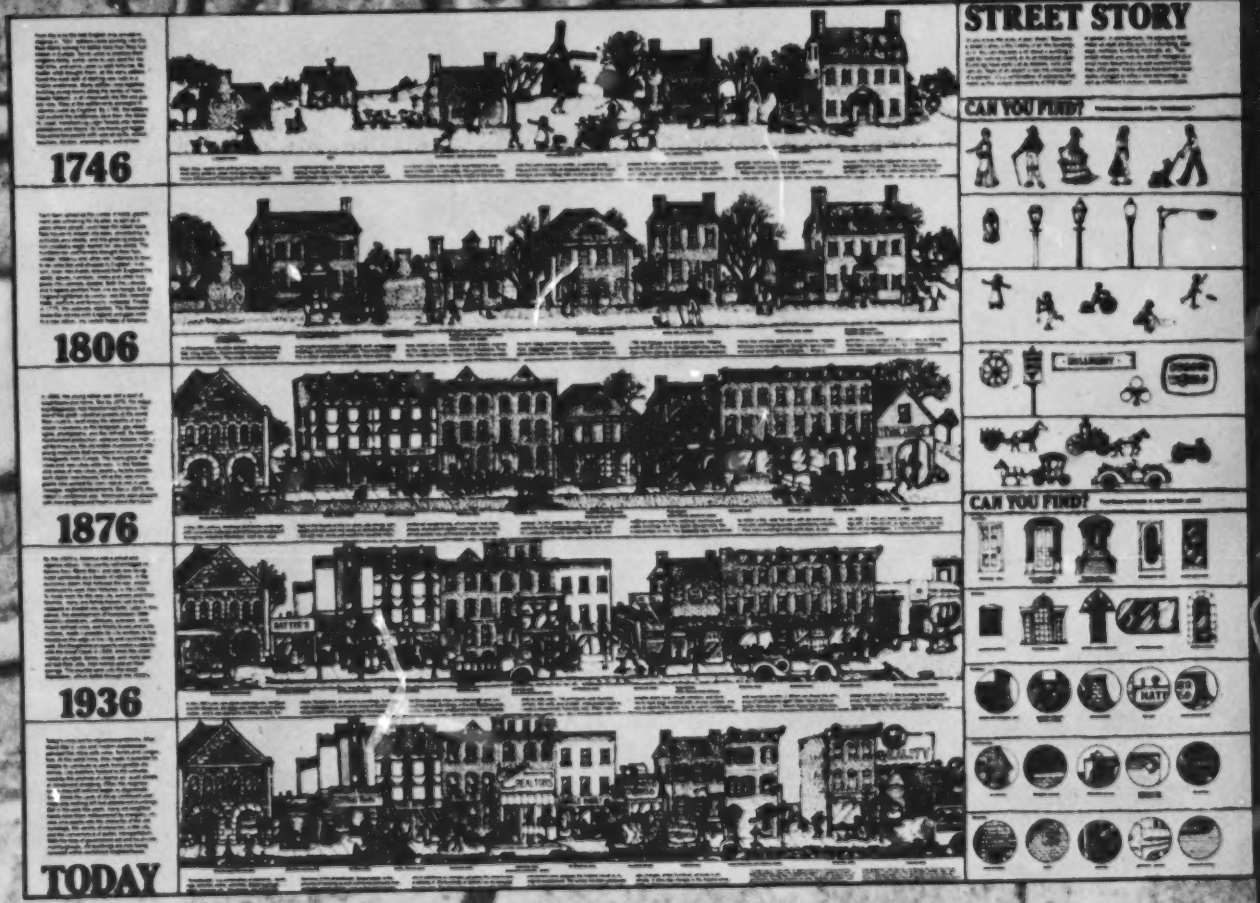
Street Smart is also [illegible] attention to early childhood development. Materials are [illegible] of the child's exposure to [illegible] environment [illegible] to stages in the problem-[illegible] process.

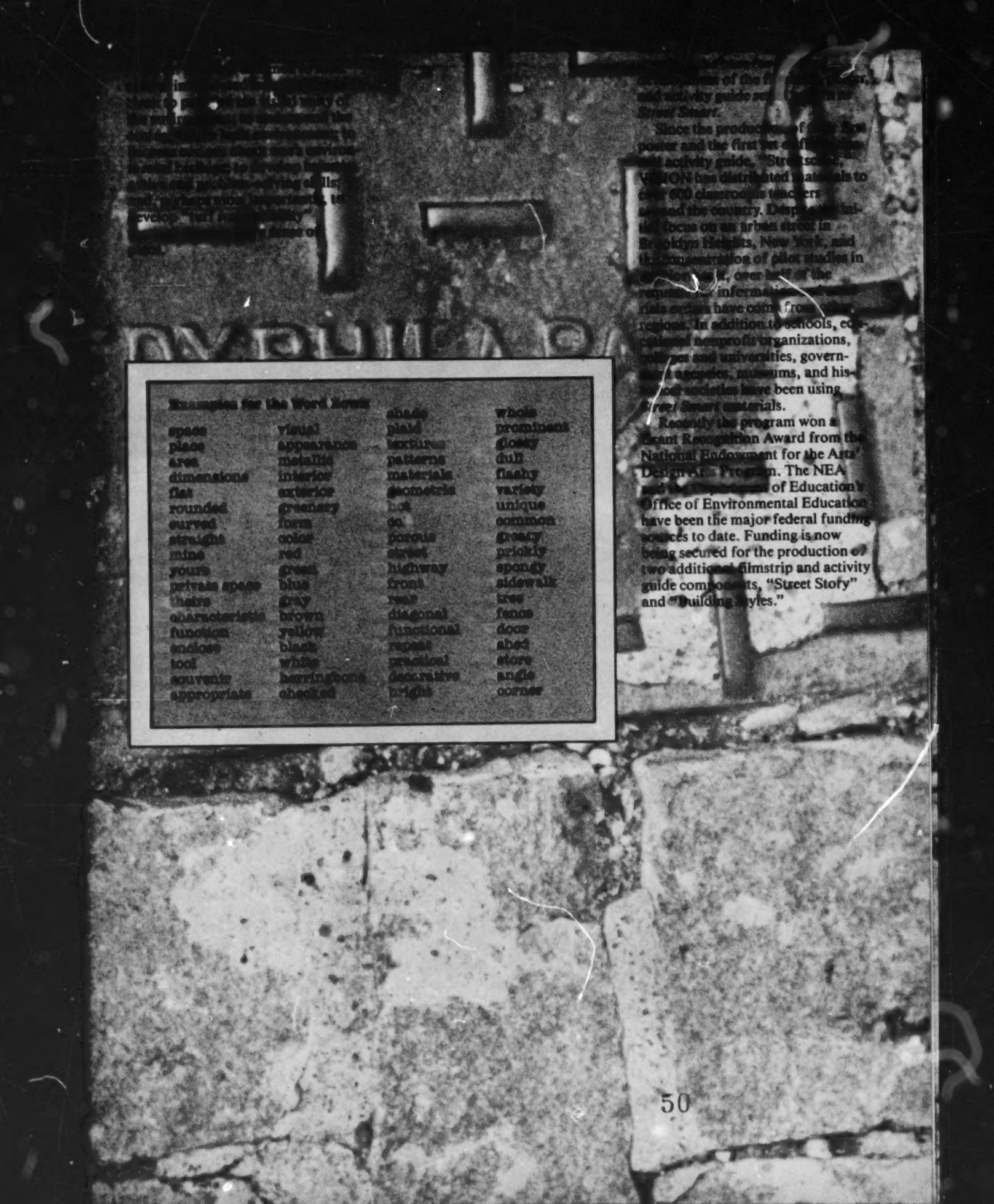
PROGRAM DESCRIPTION

Street Smart offers an audiovisual education program about the built environment for elementary and middle school children. The multimedia format includes posters, sound filmstrips, and activity guides. These resources serve as classroom catalysts for discovering, exploring, and interpreting the local built environment. The first multimedia series, "Streetscape," is currently available, having been researched and field tested over a [illegible] period. Two additional series, "Street Story" and "Building Style," are nearing completion.

Street Smart materials as a whole are patterned after the environmental problem-solving process: awareness, observation, information gathering, analysis, alternatives selection, and environmental action.

Street Smart materials, [illegible] variety of [illegible] can provide [illegible] [illegible] [illegible]


1746
1806
1876
1936
TODAY
STREET STORY
CAN YOU FIND?
CAN YOU FIND?



Examples for the Word Bank

space	visual	shade	whole
place	appearance	plaid	prominent
area	metallic	textures	glossy
dimensions	interior	patterns	dull
flat	exterior	materials	flashy
rounded	greenery	geometric	variety
curved	form	hot	unique
straight	color	go	common
mine	red	porous	greasy
yours	green	street	prickly
private space	blue	highway	spongy
theirs	gray	front	sidewalk
characteristic	brown	rear	tree
function	yellow	diagonal	fence
enclose	black	functional	door
tool	white	repeat	shed
souvenir	herringbone	practical	store
appropriate	checked	decorative	angle
		bright	corner

Since the production of [illegible] poster and the first set of [illegible] activity guide, "Streetscape," VISION has distributed materials to over 600 classrooms/teachers around the country. Despite the initial focus on an urban street in Brooklyn Heights, New York, and the demonstration of pilot studies in [illegible], over half of the requests for information and materials orders have come from [illegible] regions. In addition to schools, educational nonprofit organizations, colleges and universities, government agencies, museums, and historical societies have been using *Street Smart* materials.

Recently the program won a Grant Recognition Award from the National Endowment for the Arts' Design Arts Program. The NEA and the Department of Education's Office of Environmental Education have been the major federal funding sources to date. Funding is now being secured for the production of two additional filmstrip and activity guide components, "Street Story" and "Building Styles."

TITLE: **Street Smart: A Built Environment Education Program**

AUTHOR: Project Directors: Joyce Meschan, President; Michael Robinson, AIA, Vice President

INSTITUTION: VISION, Inc.
The Center for Environmental Design and Education

GRADE LEVEL: Elementary and middle schools (1 through 8)

RESOURCE TYPE: Audiovisual program of classroom resources, filmstrip, activity guide, and posters

SUBJECT AREAS: Language arts, social studies, art

TOPICS COVERED: Streets, aesthetics, history of built environment

SETTING FOR USE: Classroom and neighborhood center, streets near school

PRODUCTS: Filmstrip with sound cassette, Streetscape activity guide, Street Story poster.

INFORMATION:
VISION, Inc.
The Center for Environmental Design and Education
219 Concord Ave.
Cambridge, MA 02138

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Resources

The resources contained in this section were recommended by environmental educators across the country—teachers, administrators, state coordinators, non-formal education specialists, and professional resource persons—as well as staff members of The American Institute of Architects, The Center for Environmental Education, Inc., and several resource libraries. Over 150 items were endorsed as effective and useful resources for environmental learning experiences.

The twenty-nine resources in this first edition of The Sourcebook *were selected from the original list of recommendations by a review committee of architects and educators. The basic selection criteria for inclusion are that the material is commercially available, currently in use and that in the aggregate the materials represent the spectrum of environmental education topics and treatments, as well as grade levels and subject areas. The selection does not classify materials as the "best," but rather presents ideas and references that will be helpful to the wide range of interests, backgrounds, experiences and intentions that characterize environmental education participants.*

Two indices precede the entries. The first matrix indicates grade level, subject, setting and topic. The second indicates learning areas that are derivative of the ERIC system descriptions. The resources are alphabetical by title.

Each individual entry contains bibliographic and ordering information, a review of its basic features and special qualities, an evaluation of the material by someone who has used it and selected graphic elements that convey the visual quality of the book. A representative activity has been reproduced (edited in some cases to meet the requirements of this format) except in those instances in which the resource is essentially reference material.

This section will be updated annually to include additional resources. A response form is provided at the back of The Sourcebook *to assist in the collection of this information from our readership. If you are interested in recommending a specific environmental education resource which you have found helpful, please complete the reply card found in the back of this book, or write directly to Alan Sandler, Public Education, The American Institute of Architects, 1735 New York Avenue, NW, Washington, DC 20006-5292.*

	A-I-S Planning Workbook	Art, Culture and Environment	Biological Environmental Pictorial Investigations	Building: The Fight Against Gravity	Care of a Small Planet	City Building Educational Program	Connections	Draw!	Eco-Antics	Encounter with the Northwest Environment	Environmental Education Activities Manual	Environmental Encounter	Essence I and II	First Steps in Ecology	Green Box	A Guide for Teaching Regional Environmental Planning	Historic Preservation Education	Investigating Your Environment	The Mystery Tour	Our Man-Made Environment	People in Places	A Place to Live	Problem Solving in the Man-Made Environment	Save the Earth	Streets	Sunship Earth	Symbiosis 3	Understanding the Game of the Environment	We Can Help
GRADE LEVEL																												
K–3	●			●		●	●		●	●			●	●	●	●				●			●					●
4–6	●		●			●	●		●	●			●	●	●	●	●			●	●		●	●		●		●
7–8	●	●	●	●			●			●	●	●	●			●		●		●	●		●		●			●
9–12	●		●				●		●	●	●	●			●			●		●	●					●	●	●
College–Adult	●		●				●		●		●	●						●		●	●					●		
SUBJECT AREA																												
Art	●	●				●	●	●		●	●	●				●			●			●	●	●	●		●	●
Language Arts				●			●				●	●				●		●	●			●			●		●	
Math					●		●	●		●		●	●			●		●				●			●		●	
Science			●		●	●			●	●	●	●	●			●	●	●		●		●			●		●	●
Social Studies	●	●			●		●	●	●	●	●	●	●			●	●	●		●	●	●			●		●	●
RESOURCE TYPE																												
Teacher Guide	●	●			●	●	●	●		●	●	●	●			●	●	●		●		●			●		●	●
Student Resource			●		●			●	●			●	●				●			●	●	●					●	●
SETTING FOR USE																												
Classroom		●	●	●	●	●	●	●	●	●	●	●	●			●	●	●		●	●	●					●	●
Studio		●		●			●				●	●				●				●	●							
Lab				●	●		●				●	●					●											
School Grounds					●						●	●	●			●	●			●							●	
Field Trip							●		●	●	●	●	●			●	●	●		●							●	

The American Institute of Architects

The Sourcebook

	A-I-S Planning Workbook	Art, Culture and Environment	Biological Environmental Pictorial Investigations	Building: The Fight Against Gravity	Care of a Small Planet	City Building Educational Program	Connections	Draw!	Eco-Antics	Encounter with the Northwest Environment	Environmental Education Activities Manual	Environmental Encounter	Esence I and II	First Steps in Ecology	Green Box	A Guide for Teaching Regional Environmental Planning	Historic Preservation Education	Investigating Your Environment	The Mystery Tour	Our Man-Made Environment	People in Places	A Place to Live	Problem Solving in the Man-Made Environment	Save the Earth	Streets	Sunship Earth	Symbiosis 3	Understanding the Game of the Environment	We Can Help
COMMUNITIES Neighborhoods, towns, cities and suburbs How communities work, what form they take, what forces shape them			●		●				●	●	●		●		●		●	●	●			●						
STRUCTURES AND TECHNOLOGY Shelters, materials and tools How buildings work, how they are constructed, how they change over time	●		●		●	●					●						●				●				●			
ENVIRONMENTAL BEHAVIOR Human behavior and interaction with the environment How people use space, why people alter their environment, how can environmental problems be solved			●		●	●				●	●	●	●					●	●			●	●	●				
DESIGN The process of creating form and space What are basic design considerations, what is the design process, how do people perceive and appreciate design	●	●			●		●				●						●				●				●			
HERITAGE Historical forces affecting the environment How local history affects the contemporary environment, why architectural styles and historic buildings are valued, how cultural heritage influences the use of space		●								●	●	●					●								●			
NATURAL LAWS Ecological principles of the biosphere How natural systems work, how matter and energy flow, what constitutes ecological imbalance		●								●		●					●								●			
ECOSYSTEMS Naturally bounded habitats for life What sustains an ecosystem, what limits and capacities exist, how dynamic equilibrium works		●					●		●	●	●	●	●				●								●			
EARTH RESOURCES Elemental resources Where they come from, how they are consumed, how they are regenerated		●		●			●		●	●	●	●					●								●			

Architects-in-Schools
PLANNING WORKBOOK

Architects-in-Schools Planning Workbook

Educational Futures, Inc. with a grant from the National Endowment for the Arts

1977

Spiral bound, 82 pp., illus.

$8.00

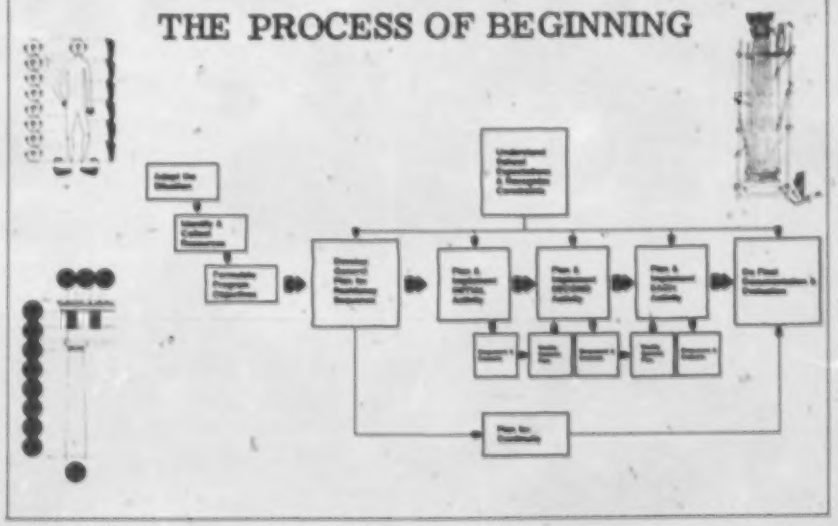
Limited photocopies available

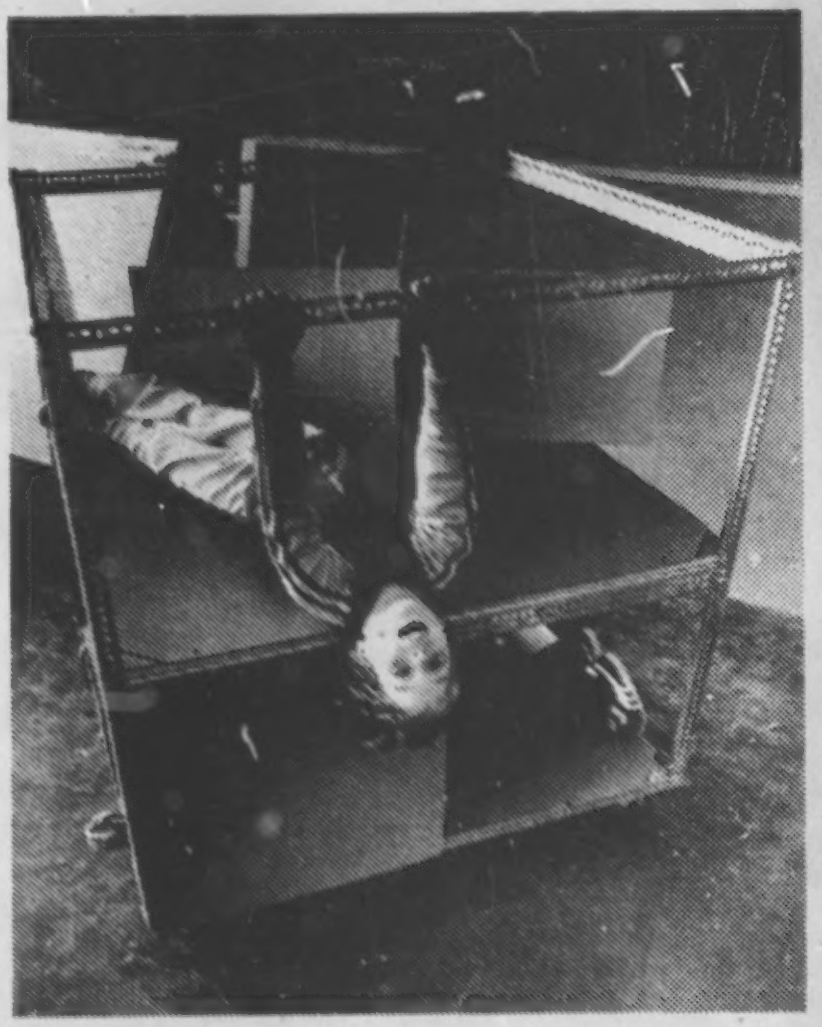
Educational Futures, Inc.
2118 Spruce St.
Philadelphia, PA 19103

In terms of its educational goals, the program's success seems to have little connection with the kind of activities chosen. . . . Teacher support and the appropriateness of the project to the specific group of students seems far more important in guaranteeing quality learning.

School district coordinator

The process of beginning is an important part of every Architects-in-Schools residency. This chart is intended to help the architect plan and enter the residency.





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An Acti

Architects-in-Schools Planning Workbook is a resource guide for participants in the Architects-in-Schools program sponsored by the National Endowment for the Arts. *The AIS Planning Workbook* provides basic program information, planning tools, and evaluation guides for the year-long residency of architects in local schools around the country. The *AIS Planning Workbook* can also serve as a valuable resource for any teacher, teacher's aide, or design professional interested in developing an ongoing school program on the built environment.

The *AIS Planning Workbook* is organized into five major sections: an introduction which explains the AIS program and players; a process section which emphasizes the learning experiences as a cultural exchange; a section on approaches and materials; instruction on documentation and evaluation; and a final bibliographic section.

The AIS program has brought together talented professionals, enthusiastic school systems, state arts agencies, and national support to provide opportunities for young people to become more aware of their immediate surroundings. The Built Environment Education Center (BEEC) in Philadelphia under the aegis of Educational Futures, Inc. has served as the coordinating headquarters for this AIS program for several years.

GRADE LEVEL

K–3	
4–6	
7–8	
9–12	
College–Adult	●

SUBJECT AREA

Art	●
Language Arts	
Math	
Science	
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

Classroom	
Studio	
Lab	
School Grounds	
Field Trip	

[Ed.'s Note: Beca

The ambiguity of a prehistoric symbol, the patterns found in Pima Indian coil baskets, and the interplay between ground and field exemplify the authors' premise that learning to see beyond mere recognition and to perceive both order and variety in the environment are some of the fundamental skills needed to make analytic judgments about our environment and to modify it to our liking.

Art, Culture, and Environment: A Catalyst for Teaching

June King McFee and Rogena M. Degge

1977

Softbound, 398 pp., illus.

$13.95

Kendall/Hunt Publishing Company
2460 Kerper Blvd.
Dubuque, IA 52001

What I find so special about Art, Culture, and Environment *is the way it expands both the subject of art and processes of teaching art. It has enabled me to make art much more meaningful to my students. I think they understand much better that art has more than one "place" in their experiences.*

Junior high art teacher

The Sourcebook The American Institute of Architects

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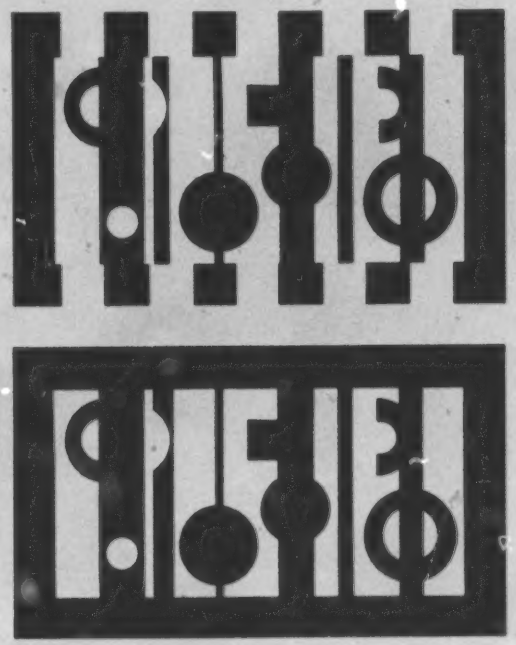


Art, Culture, and Environment is a comprehensive handbook for art teachers which extends the traditional boundaries of the study of art to include cultural communications and environmental design. This resource describes basic art processes and techniques in terms of what students can learn from seeing and making art.

In its seven major parts, *Art, Culture, and Environment* presents a progression of ideas and experiences in art education. Each part provides instructional strategies and recommendations as well as art activities specifically organized for different levels of proficiency rather than grade levels.

The book has a wealth of information, conceptual strategies, and examples for el-hi teachers, in-service and pre-service teachers, and art specialists, and is best suited to teacher education settings and as a classroom guide for art teachers. After an initial reading to become familiar with the well-structured instructional progression the authors define, teachers can use the manual as a means of structuring entire courses or as a resource or reference for specific activities or units.

The handbook's forte and uniqueness is in connecting the study of art to the real world—to history, to cities, to nature, and to culture. This is matched only by its sensitivity to both teachers and students of art. Art education is portrayed as an integral part of every person's life, as an agent of change, an expression of culture, and a way of life. The book is very convincing and not the least contrived.

GRADE LEVEL

K–3	●
4–6	●
7–8	●
9–12	●
College–Adult	

SUBJECT AREA

Art	●
Language Arts	
Math	
Science	
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

Classroom	●
Studio	●
Lab	
School Grounds	
Field Trip	

Activities To Try

Comparing the Meaning of Objects

To begin to understand that there are such things as different cultures may be very difficult for some young children. They see the world and other people entirely from their own ideas of what is "real," "right," "beautiful," and "ugly." You can begin with familiar art forms from different cultures that are somewhat alike. For example, you can start with cooking pots, something everyone is directly or indirectly involved with. . . . If your students are just entering school, you could collect some toy pots and pans. Hardware, dime, and department stores and crafts shops in your school's neighborhood will give you some idea of what people are buying. Also collect some pots from other countries. Ask the students to compare the pots:

What kinds of materials are the pots made of?

What kinds of heat does it look like could be used to cook with them?

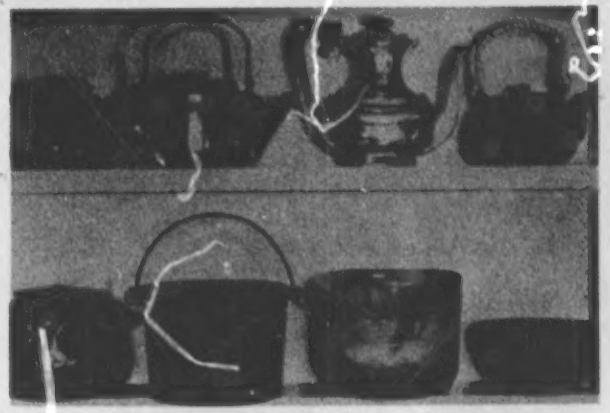
How is the shape and the material related to the heat?

What kinds of things do you think could be cooked in them?

How are the pots designed and/or decorated?

What does the design tell us about how a pot is to be used? For special events, every day, for cooking special foods?

Do the pots tell us anything about the people who use them?



How Cities and Towns Evolve

Have the students draw maps of their routes to school, to the store, to where they go after school. Discuss the networks they have created. Discuss with the students that although they go to the same places—school, store, playground—the networks will be different. Ask each student to draw a continuous line that represents his or her route between home and school on sheets of tracing paper laid over maps of the area around the school. Tape the drawings up on the window so the light shines through. Add each drawing directly over the one before, so that the students can see how all their drawings together make a map of the class's use of the neighborhood.

Where do the networks overlap the most? Where do they overlap the least?

What does this tell you about your part of the city?

Can cars and buses use the same routes you do? All of them?

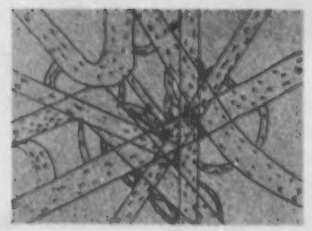
What are the routes like where only people can go?

Are these people-routes shown on the city map?

In what ways is your map like the city map?

What would happen if you all drew maps that showed the routes of everyone in your family? If we put all these together would it show new networks of how people use the city?

If all the maps of a city were destroyed, how could you help develop new maps?



The Sourcebook The American Institute of Architects

Biological Environmental Pictorial Investigations

Paul W. Richard

Laboratory School at the University of Northern Colorado

1978

Spiral bound, 136 pp., illus.

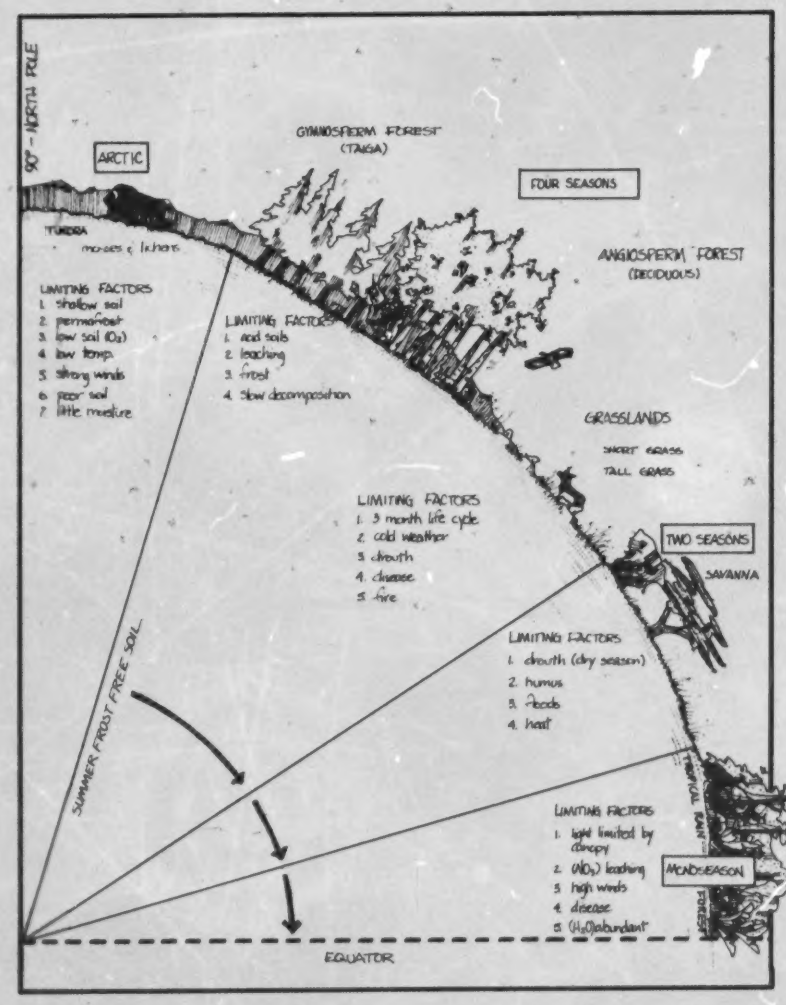
$4.75 plus 15% postage and handling

Stonecrop
PO Box 685
Greeley, CO 80632

This is a fine supplement for rainy-day classes. The idea of using pictures as a way to help learners interact with data and make decisions does work.

Middle school science teacher

Through such illustrations as these, students are encouraged to visualize a range of environmental subjects, for example, the impact of various methods of coal removal, the movement of pesticides through a food web, factors that influence aquatic ecosystems, or the major biomes of the earth. Discussion questions draw upon these images for information.



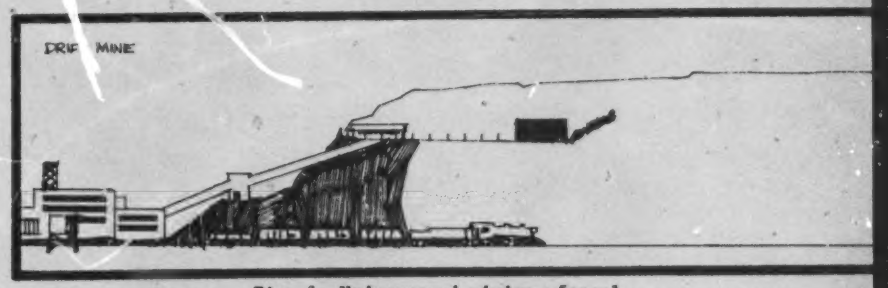
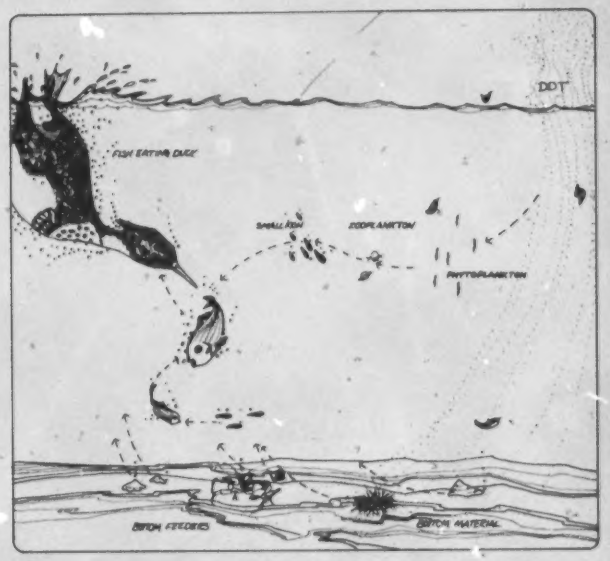
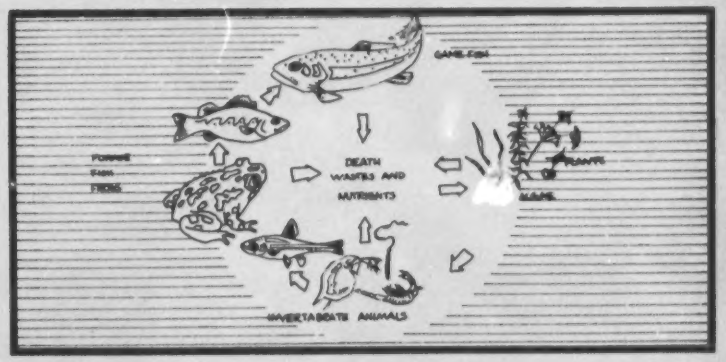


Fig. 1 Underground mining of coal

Fig. 2 Strip mining coal





The Sourcebook The American Institute of Architects

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Biological Environmental Pictorial Investigations is a student activity guide for exploring environmental topics through the use of pictures. Line drawings, graphs, charts, and diagrams are the focus of every activity which is structured around question sequences.

Investigations contains fifty individual activities which range, in random order, from topics of ecological dispersal, forest management, and aquatic ecology to energy, solid-waste disposal, and hunting. The quotations at the end of each activity lend credence to the topics and provide intellectual stimulus to the discussion.

While second-best to direct environmental observation, these pictorial investigations are convenient, easily-delivered classroom lessons. They require little or no teacher preparation and may be most helpful on special or substitute teaching occasions, for small group discussion or single-period activities. The workbooks may be handed out and collected at the end of each period.

The strategy for teaching environmental concepts through pictorial investigations is a valuable technique. The question sequences are particularly useful in stimulating class discussion and inspiring further research and problem-solving activities. *Investigations* offers an interesting alternative to the lab book approach to data collection and interpretation. The next step would be to engage students in designing their own pictorial investigations.

GRADE LEVEL

K–3 ___
4–6 ___
7–8 ●
9–12 ___
College–Adult ___

SUBJECT AREA

Art ___
Language Arts ___
Math ___
Science ●
Social Studies ___

RESOURCE TYPE

Teacher Guide ___
Student Resource ●

SETTING FOR USE

Classroom ●
Studio ___
Lab ___
School Grounds ___
Field Trip ___

An Activity To Try

Characteristics of a Floodplain

The floodplain can be defined as a strip of land bordering a stream or river which is relatively flat. It consists of sediment laid down over the centuries by the river when it moves laterally within the valley walls. The floodplain is an area which is subject to overflow during high water or flooding.

Flows that are so large they cannot be contained in the river channel must spread out over the floodplain. In general, it can be said that the floodplain is part of the river channel. Thus, the method of floodplain formation leads to the conclusion that overbank flow every few years should be considered the rule rather than the exception of stream behavior.

Purpose: To examine the characteristics of floodplains and their use by people.

Procedure: Answer the following questions as they pertain to the diagrams.

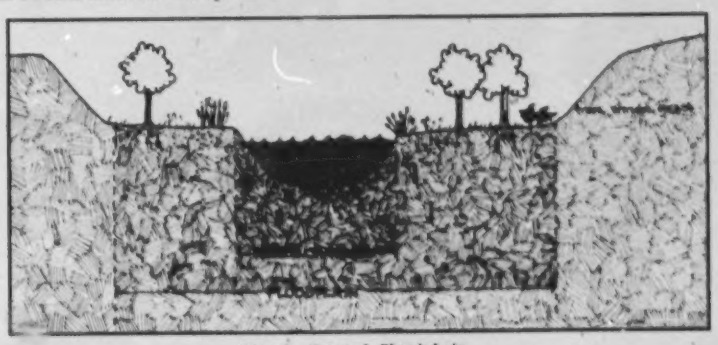


Fig. 1 Natural Floodplain

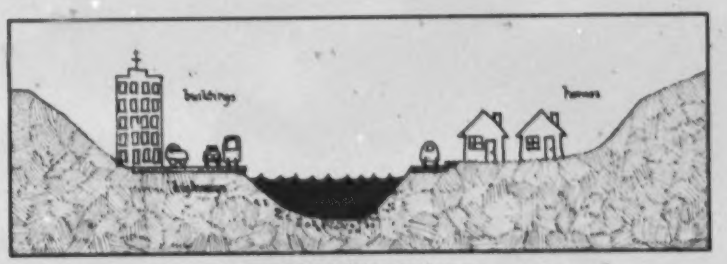


Fig. 2 Floodplain Development

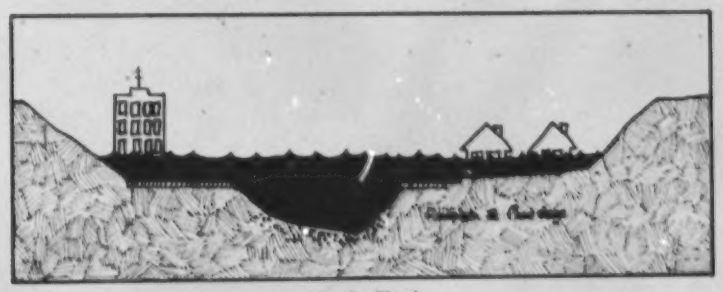


Fig. 3 Flood

Questions:

1. Which of the illustrations is the best example of a safe floodplain for living organisms to inhabit?
2. Which of the floodplains would sustain the most damage in case of flood?
3. What differences between the two figures would be significant in containing or absorbing the flood water?
4. What kind of soil would you expect to find in a floodplain?
5. How secure do you think it is to build a business on a floodplain?
6. For what reasons do you think people would want to raise crops or build buildings on a floodplain?
7. Why would people, knowing the hazards of building on a floodplain, continue to build on a floodplain?
8. Suggest a better use for the floodplains than buildings and homes.
9. The taxpayer's money is often spent to help persons who have sustained flood losses by providing low interest loans and other economic help. What policy do you suggest for helping persons who build on floodplains and have repeated flood damage to their property?
10. From your knowledge of floods and what people have built on floodplains, do you think people or nature control these areas?
11. Floodplains are called "hazard areas" by land planning agencies. Describe a wise policy regarding the persons living and building in floodplains of our rivers.

The American Institute of Architects
The Sourcebook

Building: The Fight Against Gravity

Mario Salvadori

1979

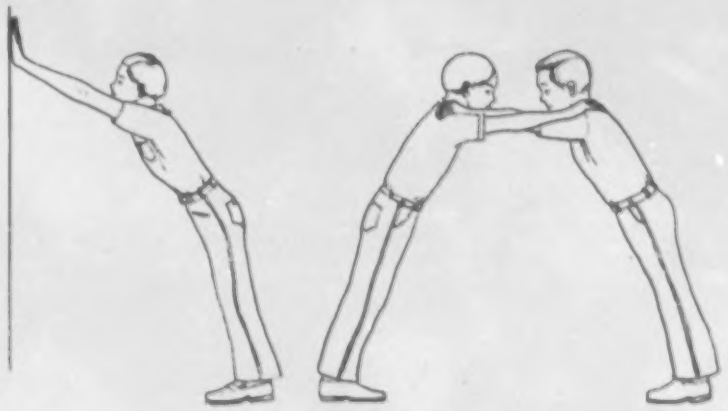
Hardbound, 147 pp., illus.

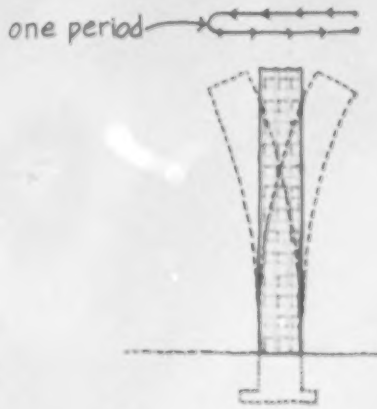
$10.95

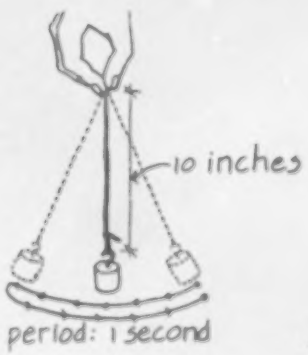
ISBN 6895-01447

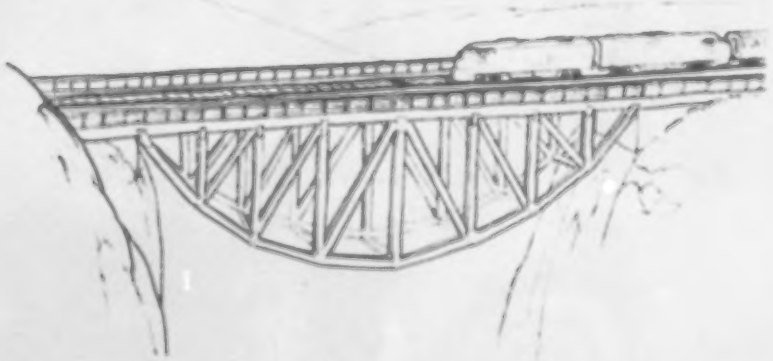
Atheneum
Charles Scribner and Son
12 Vreeland Ave.
Totowa, NJ 07512

Excellent text and experiments on applied physics for young students. What a way to get kids excited about engineering and construction principles!
Professor of architecture









The physical laws that keep buildings, bridges, tents and stadiums standing are demystified in this book. Compression and tension are easily understood through simple experiments involving pushing and pulling, shortening and lengthening. The "periodicity," or reaction to wind velocity, of buildings is explained through elementary models. Illustrations for each activity are clear and thoroughly comprehensible.

The Illustrated The American Institute of Architects

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Building reveals the world of structure: from simple enclosed space, to basic structural principles and the forces of nature, to aesthetic implications of structural design. *Building* draws on history, international environments and simple classroom models and experiments to make its points. The author, an engineer and mathematician who obviously enjoys his subject and teaching children, draws upon his expertise and experiences as a guest in many classrooms.

The book is organized into fifteen chapters, each of which could inspire multiple lesson plans. The text builds on itself sequentially and information is carefully interrelated across concepts and chapters. The topics range from specific building forms and materials to structural components, beams, cables, arches, and natural forces to be withstood.

Building is a versatile resource. A very good reference for teachers interested in structures, it can also be used with students as a text or reading assignment. Ideas can be discussed in class, models built, and individual projects undertaken to extend the textual material. *Building* is a solid base for introducing engineering concepts with a minimum of mathematical skills.

Teaching from this book requires no specialized engineering background. Structures are illustrated through simple models and references to the human body. All experiments can easily be demonstrated within a class period or less with easily obtained materials. Teachers interested in any kind of classroom building projects would be well served to read *Building* and then keep it close at hand in the classroom.

GRADE LEVEL

K–3	
4–6	●
7–8	●
9–12	●
College–Adult	●

SUBJECT AREA

Art	
Language Arts	
Math	●
Science	●
Social Studies	

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

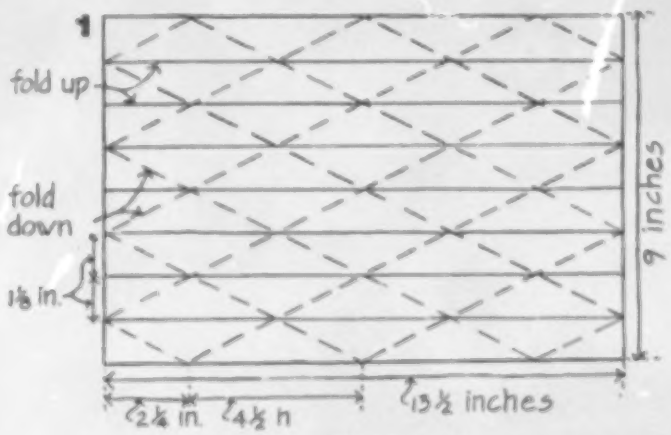
Classroom	●
Studio	●
Lab	●
School Grounds	●
Field Trip	

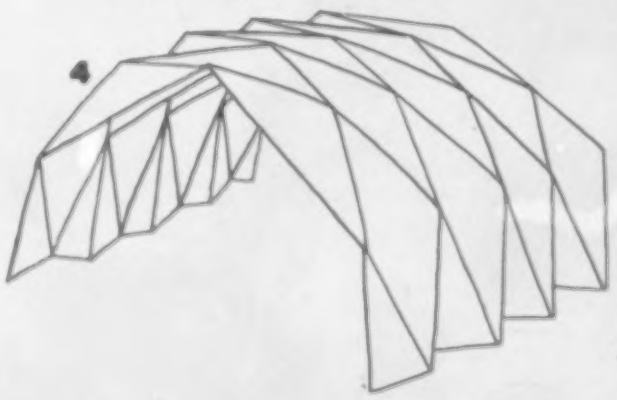
An Activity To Try

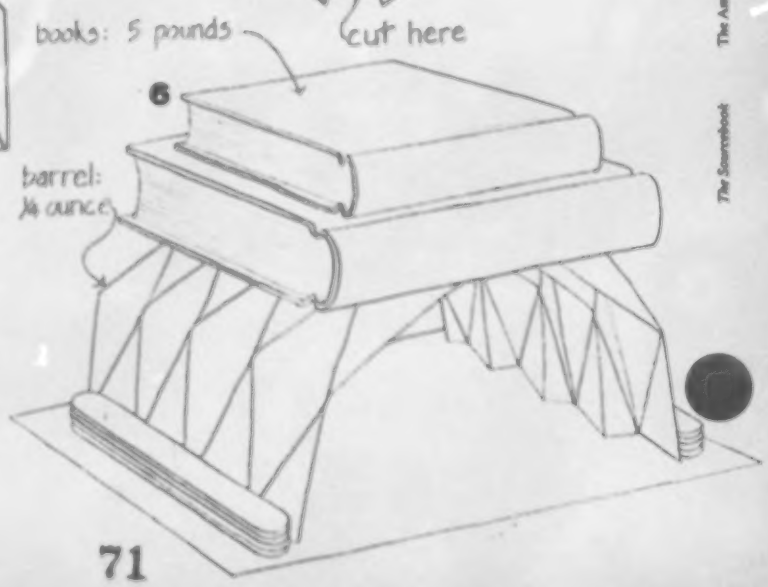
Shape and Strength

Draw the solid and dotted lines of this figure on a sheet of drafting paper, according to the dimensions given in the figure. Fold the sheet of drafting paper *up* along all the solid lines and then fold it *down* along the dotted lines, using a steel ruler as a guide. To make a strong structure, the folds must follow the lines very *accurately* and this will take,at first, care and patience. Each fold should be sharply creased with your nails. Starting at one of the long edges of the sheet, gather the folds together, as in Figure 2, and then repeat along the opposite edge. In so doing, make sure that each crease is up along the solid lines and down along the dotted lines. Take your time in doing this, and you will end up by having creased and flattened the sheet as in Figure 3. Cut its boundaries along the dotted lines so as to make them horizontal. If you now open your accordion-like structure, you will have the *creased barrel* of Figure 4.

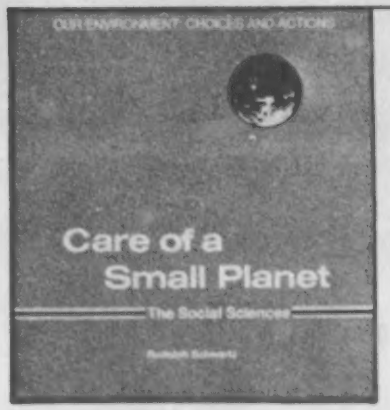
The efficiency of a structure is often measured by the ratio of the load it can carry to its own dead load. You can easily determine such ratio for the creased-paper barrel. Since a barrel, like an arch, has a tendency to thrust out, set the barrel between two wooden "buttresses" glued to a piece of cardboard. (The "buttresses" can be built up with tongue depressors glued one on top of the other.) Weigh the creased barrel on a postal scale. (Actually the weight of the barrel is so small that it is easier on a postal scale to measure the weight of 10 sheets of paper and divide this by 10 to obtain the weight of one sheet.) By means of two pencils and some wire, build the loading platform structure of Figure 5, with the pencils a distance apart about one third of the barrel's span. You can now load the barrel with small books or other loads (Fig. 6) and then weigh the platform with its book loads. You will find that a well-creased barrel can support a load of up to 300 times its own weight!





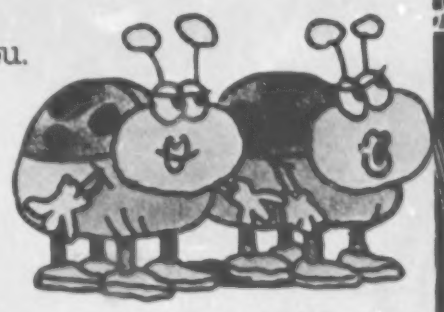


The American Institute of Architects
The Sourcebook



"Hi. We're the Ladybugs.
And these are our friends.
You'll see a lot of us in
these filmstrips.

We'll talk with you.
We'll sing with you.
We'll share ideas
with you."



Care of a Small Planet:
The Humanities
The Sciences
The Social Sciences

Margaret Cottom-Winslow,
Paul F. Brandwein, Rudolph Schwartz

1980

Softbound, approx. 180 pp. each, illus.

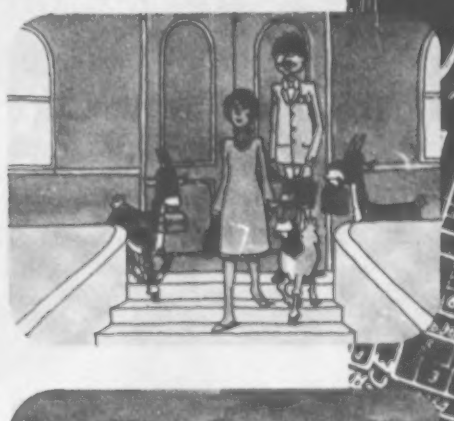
$4.50 each

(Teacher guide, $1.20; Filmstrips, $48.00 per set; PLA's, $60.00 per set.)

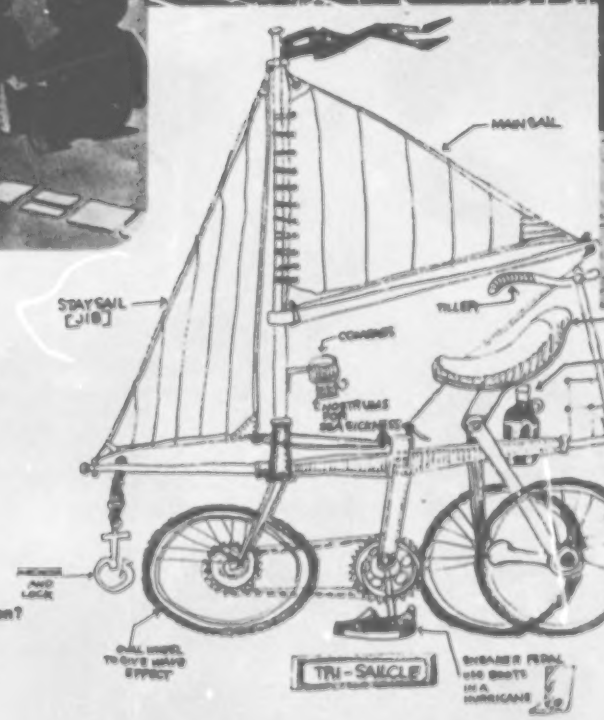
Harcourt Brace Jovanovich, Inc.
757 Third Ave.
New York, NY 10017

One of the few multi-media K-9 programs in environmental education that I am aware of. It provides an updating of traditional methods for teaching environmental education. I particularly liked the case studies.

Environmental education specialist



In addition to three basic textbooks, the Our Environment: Choices and Actions *program offers other materials: Pupil's Learning Activities (PLAs) grouped around the topics of home and school, neighborhood, and community, for use with 8- to 13-year old students, and a sound filmstrip series for primary grades.*



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The Sourcebook The American Institute of Architects

Care of a Small Planet encompasses an interdisciplinary textbook series on ekistics for junior high students. Three separate, although overlapping, texts (accompanied by teacher manuals) explore environmental concepts and values through science, social science, and the humanities.

Care of a Small Planet is part of a complete environmental program, *Our Environment: Choices and Actions*. This program is built around four basic environmental concepts: interdependence of people and the environment; use of resources to modify that environment; organization of shortage as the basis for wise resource utilization; and significance of conceptual understanding and values to the quality of life and survival itself.

CSP: The Humanities features ten cities where environmental concepts are demonstrated and th.n related to students' communities. *CSP: The Sciences* concentrates on ecological principles and examines food, population, resources, energy, and values clarification with regard to the quality of life. *CSP: The Social Sciences* deals with land, population, pollution, and world environmental problems. The approaches to environmental issues represented by these texts parallel the prevalent research strategies in each field: case studies in the humanities, investigations in the sciences, and interaction study in the social sciences.

Each text introduces students to the full context of the environmental problems in a section entitled "By Way of Beginning." The ten parts that follow are termed ACTs (Activity, Content, and Transfer) which lead students from motivational experiences to conceptual understanding and finally to the transfer of learned values. Suggestions in the margins encourage individual learning experiences and assignments.

GRADE LEVEL

K–3	●
4–6	
7–8	●
9–12	
College–Adult	

SUBJECT AREA

Art	
Language Arts	●
Math	
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	●

SETTING FOR USE

Classroom	●
Studio	
Lab	●
School Grounds	
Field Trip	

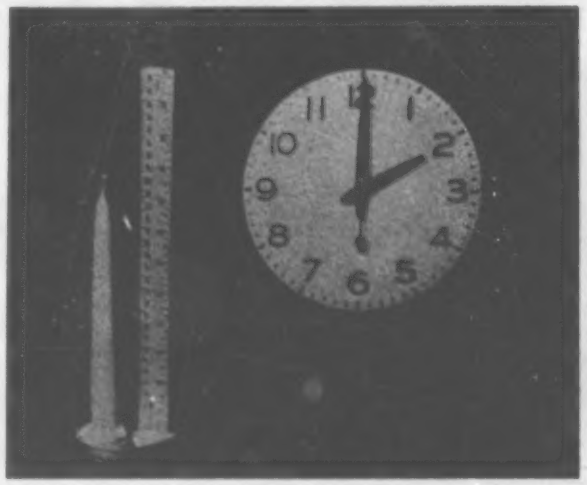
An Activity To Try

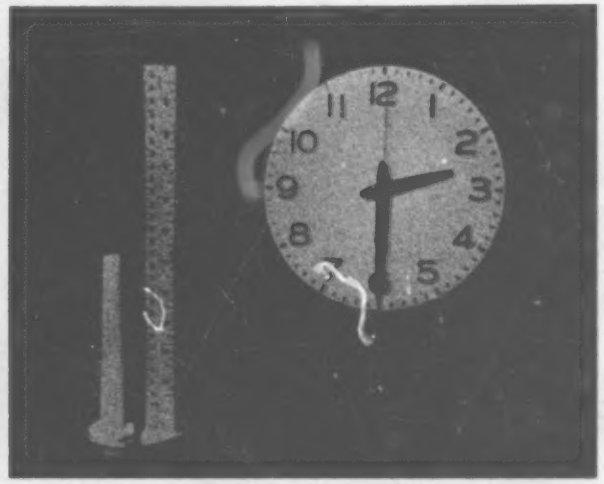
Nonrenewable Resources

What happens as a paraffin candle burns? What you see in the pictures happened in one investigation.

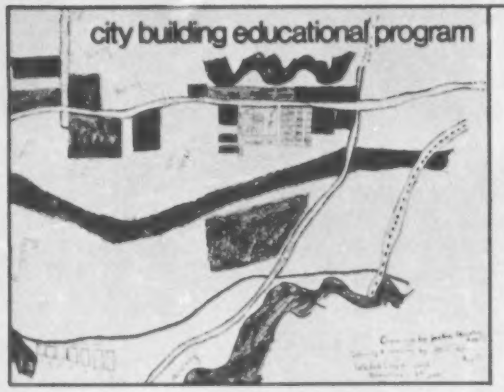
How much of this candle disappeared in one half hour? Does the candle really disappear? Or is it changed into something else?

You may recall that burning wood is changed mainly into carbon dioxide and water vapor. So too is the candle. Carbon dioxide and water vapor are gases. As they are given off, they mix with the air. In other words, once the candle is burned, the gases cannot be put together to make a candle again. If you wanted to burn a candle later, you would have to get another candle. It probably wouldn't be too hard to do. But you've already guessed that every time you burn a candle, you use up paraffin. True? And paraffin is made from oil products. Can the Earth's supply of oil be renewed? Can we go on taking more oil out of the Earth forever? No. Supplies of resources like oil or coal are limited.





The Learning Institute of Architects



City Building Educational Program: Architectural Consultant Edition

Doreen G. Nelson

The Center for City Building Educational Programs

1975

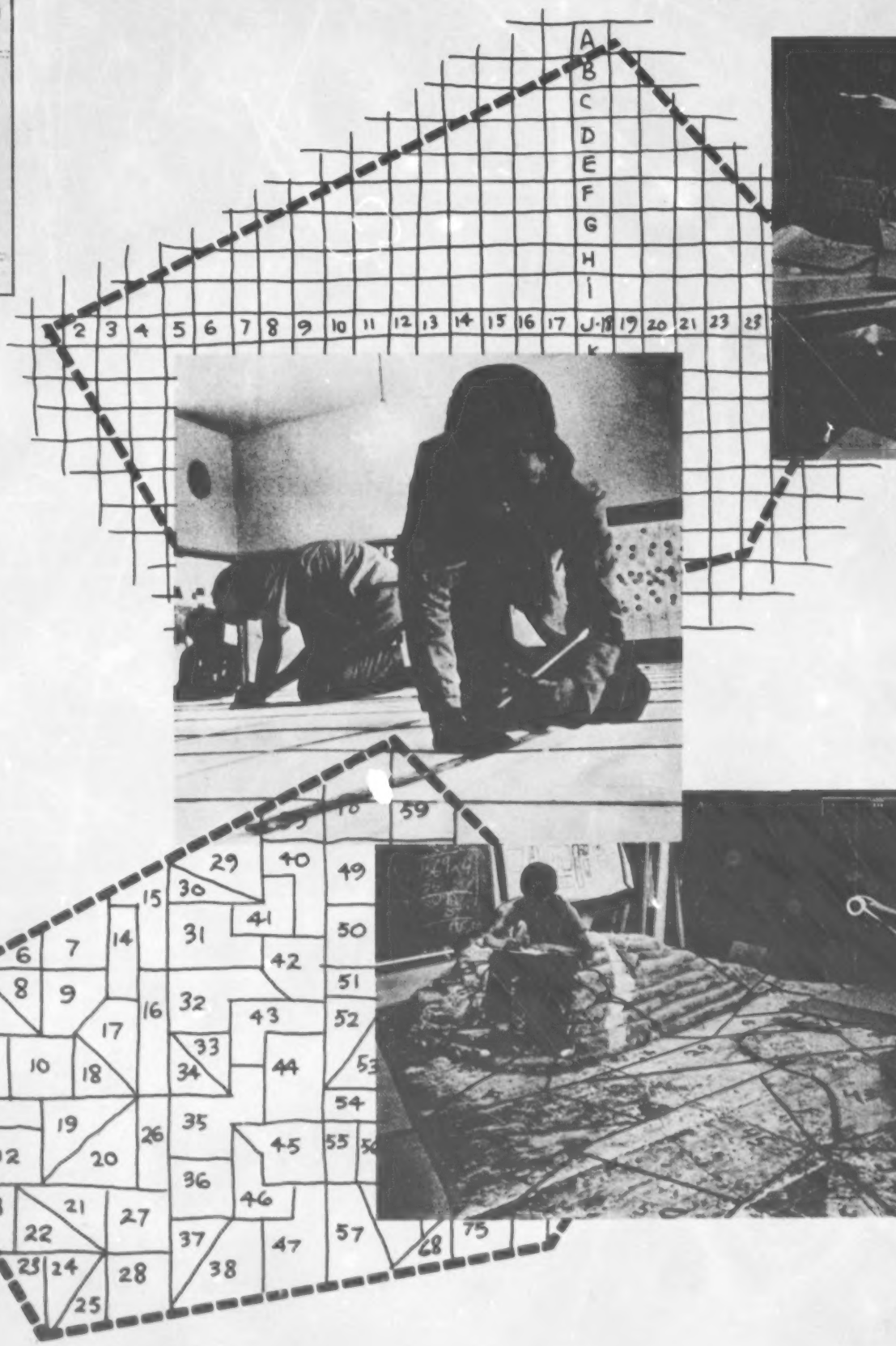
Softbound, 112 pp., illus.

$11.95

Center for City Building Education Programs
2210 Wilshire Blvd. Suite 303
Santa Monica, CA 90403

This is really excellent for active learning about the use and design of space. It's a very good way to supplement general linear curriculum with concrete, kinesthetic experiences that allow kids to make decisions about the utilization of urban space. We have used several aspects of the program in our human-designed environment course for middle schoolers.

Seventh and eighth grade teacher



In the final phase of the City Building program, relationships between the individual, community and the environment are explored. Students learn through a series of interlocked activities the techniques that future real-life situations may require of them: site selection and preparation of a site model; a simulation of land parcel development and distribution; a survey of city goals; and the formation of a political organization. Upon the completion of the building program, the students evaluate the product to determine how well the class accomplished its task.

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City Building Educational Program is a unique, interdisciplinary approach to elementary education which uses the functions of a city as an educational strategy that spans subject areas, grade levels, and traditional curriculum.

City Building is a year-long experience (all day, every day for elementary students; three hours a day, three days a week for older students) that structures progressively more complicated activities around four overlapping phases: the individual, his relationship to objects, to organizations, and to the community and its environment.

The process of "transformation" is the central educational technique supported by classroom tools such as flow charts, classroom history walls, and the classroom-city. Each student progresses from individual activities to increasingly complex group-organized functions within the classroom-city.

City Building is a highly developed process, piloted and tested in the Los Angeles school system and adapted by dozens of public and private schools, museums, and theaters around the country. The process is documented in an architectural consultant manual which is the best introductory reference to the program.

This program requires intensive, continuous teacher training and the coordinated efforts of consulting community resources. Thus a major commitment is required on the part of the teachers and the school administration. Short of this, *City Building* remains an exemplary program from which much can be learned.

GRADE LEVEL

K–3	●
4–6	●
7–8	
9–12	
College–Adult	

SUBJECT AREA

Art	●
Language Arts	
Math	●
Science	
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

Classroom	●
Studio	
Lab	
School Grounds	
Field Trip	

An Activity To Try

Evaluation and Problem-Solving

Objectives: Through use of the matrix for evaluating and problem-solving, students gain facility with logical concepts and their applications.

Materials: Objects brought to class by the students for the Purium city building simulation.

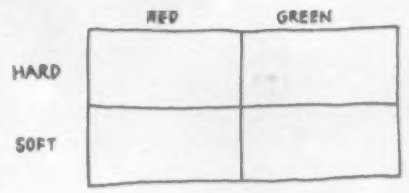
Duration: 2 hours

Procedure:

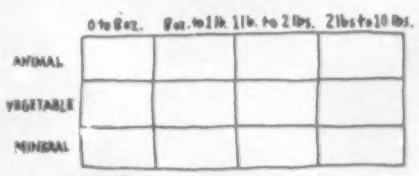
A. The concept of category.
   1. The children are asked to bring a selection of at least 10 objects to class. They can be anything—stones, toys, leaves, junk, sea shells, etc.
   2. When all the objects have been brought in, they are placed on a table.
   3. A small group of children work together. Each child in turn is asked to select objects from this collection which fit into a given category, such as "green objects," "long and thin objects," "metal objects," etc.
   4. The concept of category or set could then be discussed with the previous experience as a backdrop.
   5. A worksheet could be made by the group and presented to the class for discussion.

B. The concept of binary logic.
   1. With a small group of children (about 6), each child in turn is asked to divide the objects from this collection into two categories which are mutually exclusive. "Big or small," "red or green," "long or short" are examples of pairs of categories that could be used.
   2. Alternatively, the teacher could ask "yes" or "no" questions of the students. If the questions are phrased in just the right way, they are hard to answer. This difficulty could be pointed out as a problem inherent in binary logic.
   3. The concept of binary logic could then be discussed with the previous experience as a back drop. Binary logic is the process of making decisions by choosing between two mutually exclusive categories. It might be good to point out that the lowest level question is a "yes" or "no" question, and that a more open-ended question requires more thought, but produces a better answer.

C. The concept of the matrix.
   1. First, a simple 2 x 2 matrix could be introduced. The objects could again be divided, this time into two sets of two categories. For example:



   2. Matrixes with more categories could then be introduced, such as 2 x 3, 3 x 3, 4 x 4, etc. A sample 3 x 4 matrix is shown below:



   3. The concept of the matrix could then be discussed, especially with respect to its usefulness as a decision-making and evaluation tool. (The Purium simulation and following activities will provide many opportunities to use the matrix for problem-solving and evaluation.)

D. Evaluation and follow-up will occur throughout the school year when these logical concepts are applied to problems.

The American Institute of Architects
The Sourcebook

Connections: A Curriculum in Appropriate Technology for 5th and 6th Grades

Joan Melcher

National Center for Appropriate Technology

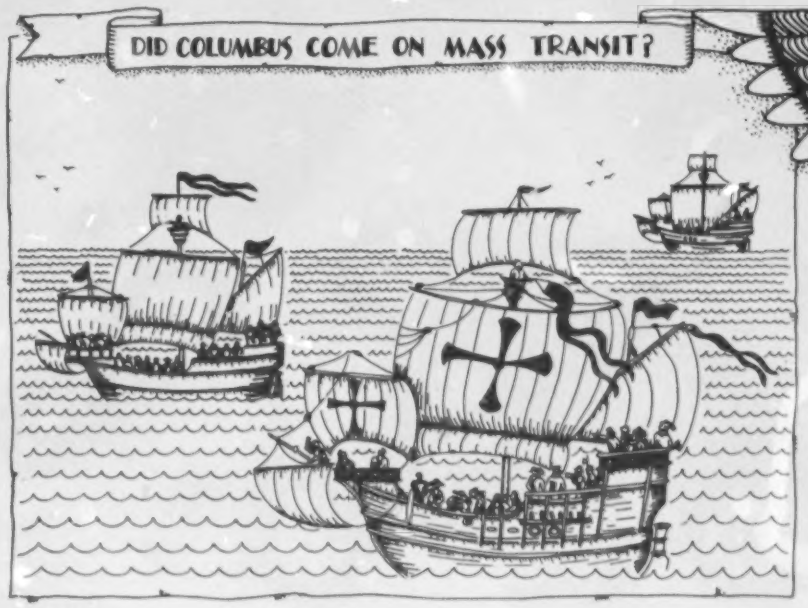
1980

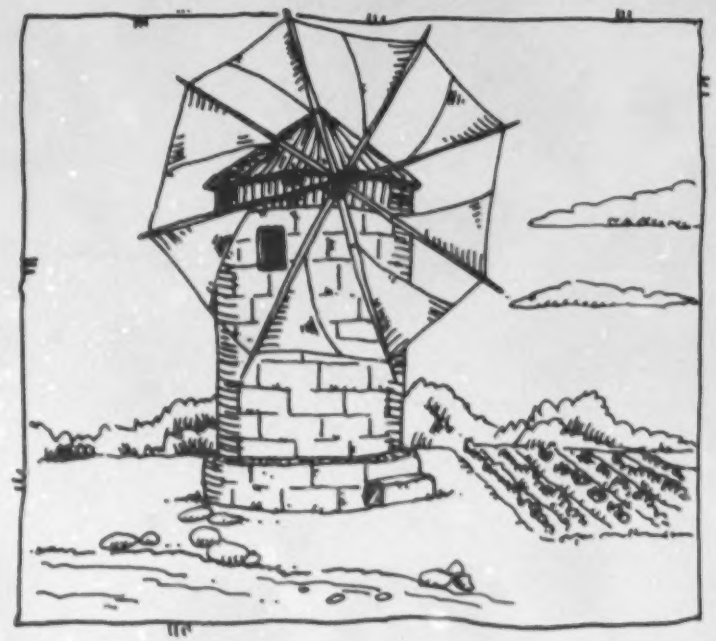
Softbound, 109 pp., illus.

$5.00

National Center for Appropriate Technology
Box 3838
Butte, MT 59701

This is a fun, easy-to-use, supplemental resource and probably the only alternative technology curriculum around.
Grade school teacher





Activities with whimsical illustrations such as these prompt discussions about what forms of mass transit existed in the past and how they affected people's lives, or encourage active participation in recycling efforts, or give historical perspectives on energy and conservation efforts.

The Sourcebook The American Institute of Architects

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Connections is an activity guide for elementary school teachers in appropriate technology. *Connections* combines the first-hand classroom experience of its authors with some tried-and-true activities from other sources. It is a helpful compendium for beginning teaching experiences in appropriate technology.

The book is organized into ten lesson plans that include activities in appropriate technology, energy conservation, transportation, waste and recycling, solar energy, nutrition, and organic gardening. Each lesson presents teacher background essays, classroom discussion topics and activities, homework assignments, vocabulary lists, and quiz questions. In addition to the lesson plans, *Connections* provides a succinct teacher introduction to the subject, student bibliography, teacher references, and a glossary. There are also twenty-one masters for student handouts and a colorful poster for the classroom.

Connections is multidisciplinary, offering, in addition to the social studies and earth studies activities that predominate, math exercises, art activities, and recreation suggestions. Lesson plans can be conducted sequentially or at random, as an intensive ten-week unit, or throughout the year as extension exercises. The numerous ideas and activity suggestions in each lesson plan could well occupy several days each.

Connections puts environmental awareness to work in the context of useful, intermediate technology. The emphasis is on small-scale, decentralized technology simply designed, ecologically sound, and consistent with the development of local self-reliance.

Connections originated in a fifth-grade classroom in Butte, Montana. Through the support and research of the National Center for Appropriate Technology, *Connections* has been field tested, revised, and published for national distribution.

GRADE LEVEL

K-3	●
4-6	●
7-8	
9-12	
College-Adult	

SUBJECT AREA

Art	●
Language Arts	
Math	●
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

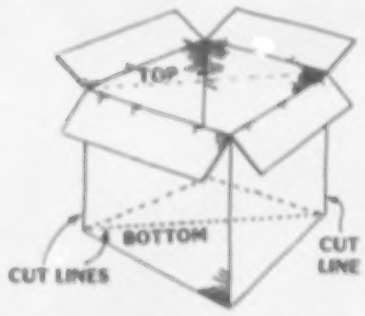
Classroom	●
Studio	
Lab	●
School Grounds	
Field Trip	●

An Activity To Try

How to Make a Solar Water Heater

Materials Needed:
Rubber band, large tin can, aluminum foil, steel wool, cardboard box, metal primer, flat black paint, glue, rubber cement, scissors, brush for painting, clear vinyl or Saran Wrap, silver duct tape.

1 Cut the box in half along the diagonal as shown, leaving a triangular shaped top and bottom. Then cut off the top triangle.



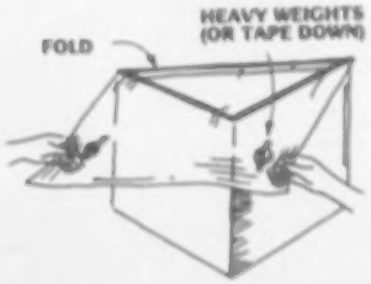
The left-over piece has two sides that can be cut out to fit flat onto the sides of the remaining half-box. Glue aluminum foil to these two pieces with Rubber cement (be sure to read the directions on the label), then tape them to the sides of the half-box. These side pieces will add some thickness to the walls and help keep heat inside.

Cover the bottom with aluminum foil in the same manner.

2 Tape a small stick of wood with silver duct tape across the top corners of the heater box as a brace.

Use Saran Wrap or clear vinyl and tape it to the bottom and sides of the box as shown. Make sure it is cut long enough to have some left over to fold over the top.

The fold-over flap can be used as a door to get into the box. You can tape heavy weights to the corners for holding it shut or just use tape for as long as it sticks.



3 Use any can, about 1 quart size and without leaks.

Peel off any labels and rub the can with steel wool or fine sandpaper to dull the shiny finish.

Brush the can with a metal primer, let it dry completely, then paint it with a flat black enamel or latex paint.

4 Open the top of the heater box.

Fill the water can, cover the top of it with Saran Wrap or clear vinyl, and wrap a rubber band around the top of the can to seal it.

Place the filled can on the bottom of the heater box and close the top flap. Be sure it is well-sealed.

Face the front of the box to the south and wait for it to heat up. You can test the temperature of the water by sticking a thermometer into it. You can also experiment with different colors or different kinds of water cans and jars.

The water heater may be the most effective demonstration project suggested here. Make sure the plastic covering used is tight around the box and the heater is aimed directly toward the sun and you'll find sure success. Of course, a sunny, clear day is the best time for testing any of the models, but our experiments showed that the water heater will perform under relatively adverse conditions.

First, we tested on a clear, warm day (about 85°) in Butte. We began with very cold water from the tap. In less than an hour the water was face-washing warm; in two hours, it was beginning to steam and good for making tea; in three hours it was too hot to touch. On a cloudy, cooler summer day (about 70°) in Butte the water heated to face-washing temperature in four hours.

[Ed.'s note: Check the temperature periodically. Those of you in the Sunbelt should be cautious about instant burns and scalding.]

The Mountain Institute of Architecture

Draw! A Visual Approach to Thinking, Learning and Communicating

Kurt Hanks and Larry Belliston

1977

Hardbound and softbound, 242 pp., illus.

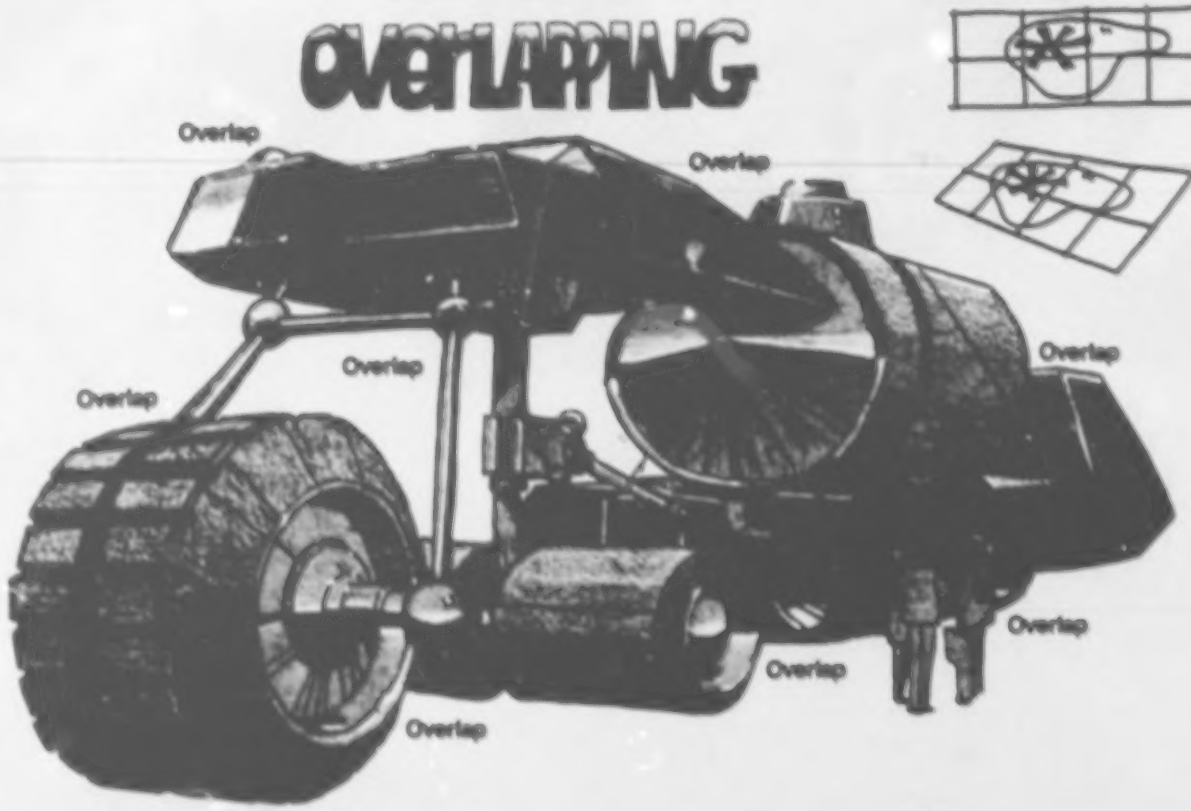
$19.75 (hardbound), $9.75 (soft)

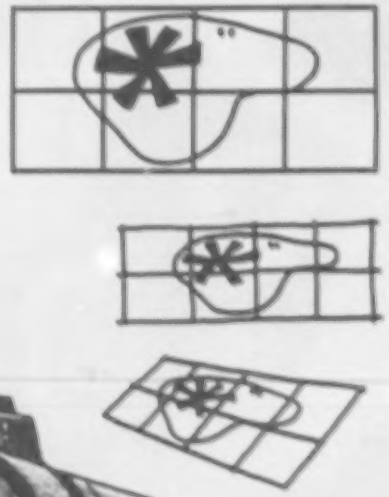
ISBN 0-913232-46-7

William Kaufmann, Inc.
One First St.
Los Altos, CA 94022

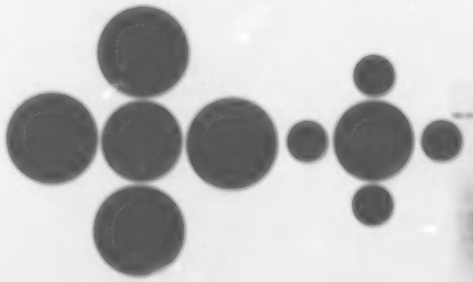
This is such a great, crazy book. It is guaranteed to conquer anybody's artistic phobias.

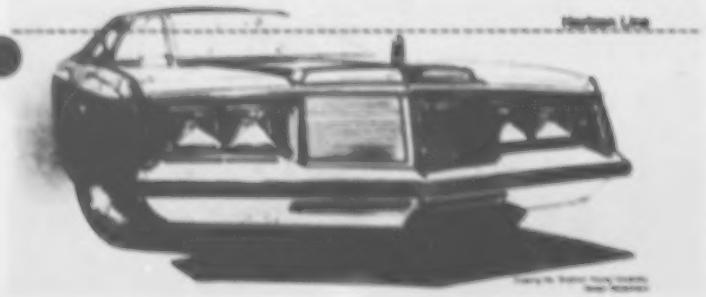
High school science teacher

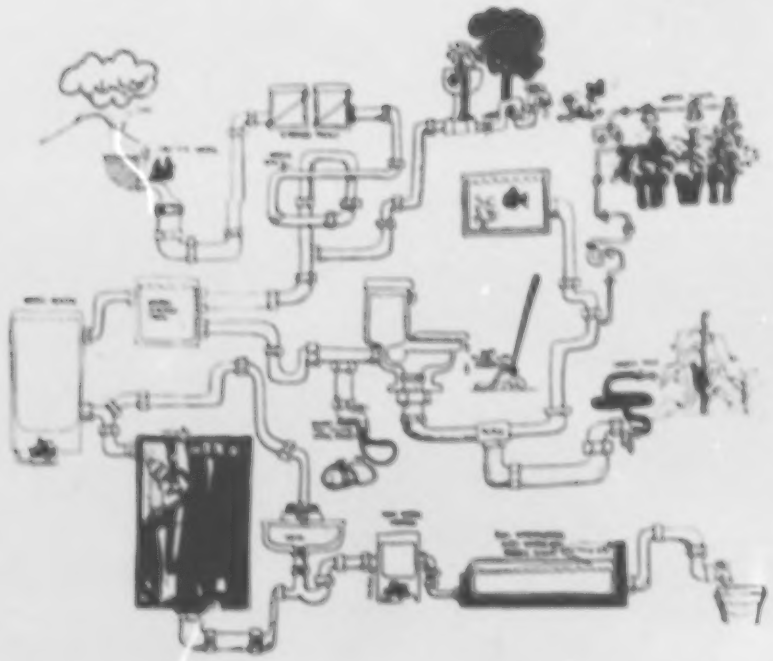




The drawings throughout this book, many by professionals, were chosen to illustrate that drawing is a learned skill that everyone can use to express ideas, or to help create them. Learning how to indicate size and scale, to understand perspective and to visualize a process or system are some of the skills emphasized in this book.







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Draw! is an entertaining primer for teachers and students on visual thinking, perception, and expression. While the process of drawing is the overt theme, the underlying emphasis is on learning how to see the multiple dimensions of our visual environment.

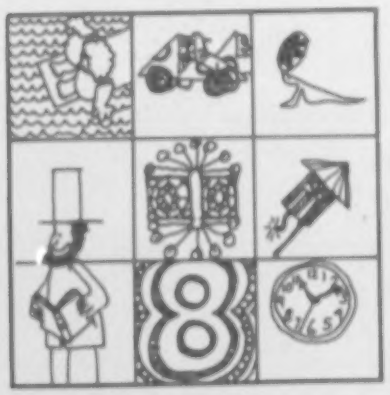
Written and designed by two graphic artists, *Draw!* starts with the assumption that anyone can draw and, more importantly, that drawing should be regarded as a tool, a means to an end, whether for problem-solving, innovation and ideation, communication, or self-expression. *Draw!* also offers information on basic drawing tools, methods, and techniques.

As an introduction to observing the environment, *Draw!* can be used to encourage students, whatever their drawing ability or experience, to examine more carefully, record more accurately, and interpret more imaginatively the images of their environment.

Draw! is filled with ideas and exercises that can be used individually or in class. The book itself should be shared with the students directly, for the text and graphics are inspiring as well as instructional.

GRADE LEVEL	
K–3	
4–6	
7–8	●
9–12	●
College–Adult	●
SUBJECT AREA	
Art	●
Language Arts	●
Math	
Science	
Social Studies	●
RESOURCE TYPE	
Teacher Guide	●
Student Resource	●
SETTING FOR USE	
Classroom	●
Studio	●
Lab	
School Grounds	
Field Trip	

These are the finished images of what one person saw in the lines on the next page. Did you see the same thing?



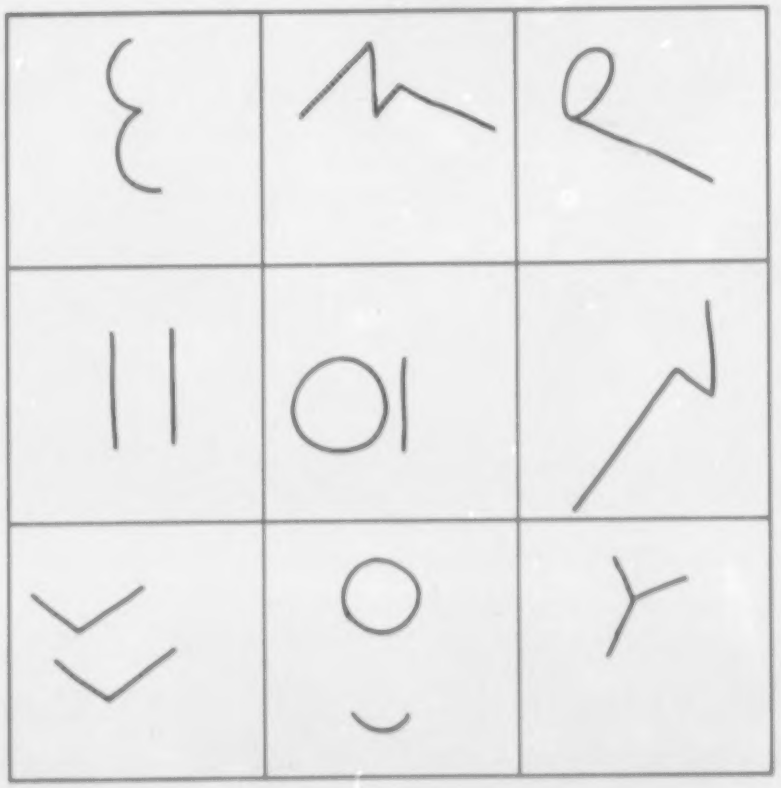
Activities To Try

The Image

The third part of the drawing process is Image. Image refers to what you think you see as opposed to what you actually see. . . . That which we see creates some sort of image in our mind. Many things are obvious and we see them so often that their images pass by apparently without registering. Think of a telephone dial for instance. You have seen it hundreds of times and it is fairly simple. Yet could you describe it in detail, placing the numbers and the corresponding letters of the alphabet correctly together around the circular dial? Most people can't.

Scribble a line—make something from it

When you were younger you probably played a game similar to this. Given a line in a square, make something from what you see. Complete the drawing. Try this with someone else and you will find that most everyone sees a completely different image for each square. Try it!



Eco-Antics

Mabel A. Hammersmith and Laura Watkins

Girl Scouts of the U.S.

1974

Softbound, 64 pp., illus.

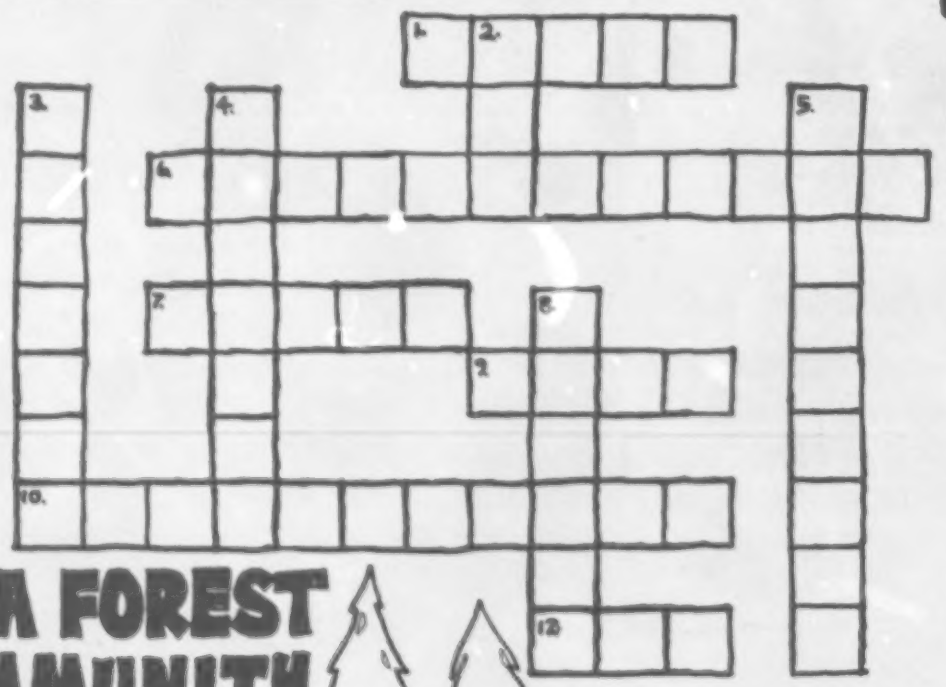
$.50

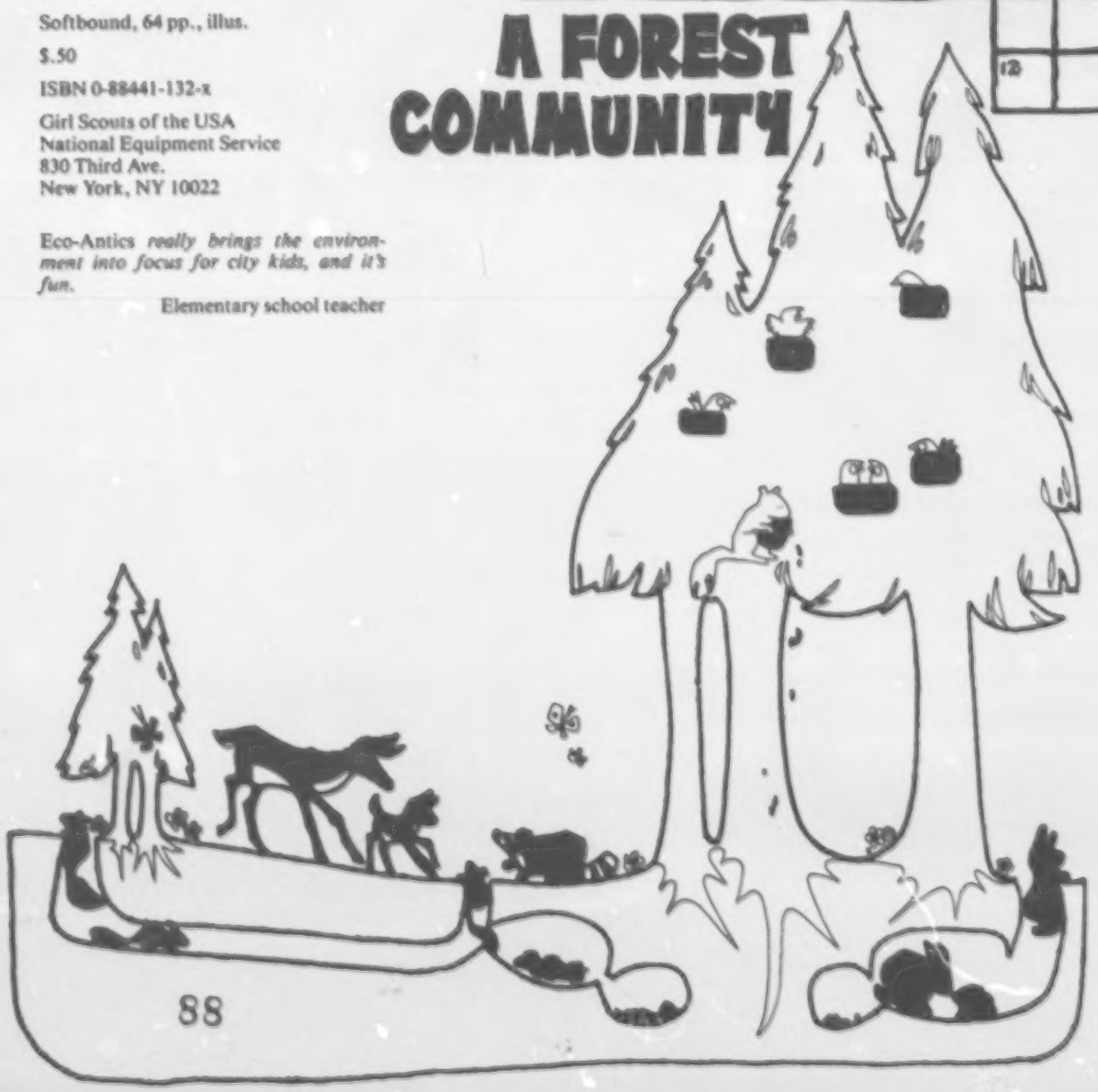
ISBN 0-88441-132-x

Girl Scouts of the USA
National Equipment Service
830 Third Ave.
New York, NY 10022

Eco-Antics *really brings the environment into focus for city kids, and it's fun.*

Elementary school teacher





The Smithsonian The American Institute of Architects

NOISE!

FOOD CHAINS

Forest communities can be similar to urban ones. What, in a forest, approximates apartments, traffic, a basement, a storehouse or a garbage disposal? And what can be learned from observing a caterpillar, spying on flies, or training a fish? Environmental lessons are both pleasurable and inescapable in this engagingly illustrated activity book for young children.

This material reprinted by permission of copyright holder.

Eco-Antics is a workbook for city-dwelling youngsters to learn more about their total environment. Developed originally for Girl Scout troops, *Eco-Antics* provides both entertaining and instructional expe-riences for young learners.

Eco-Antics is designed as a work-book for individual use, organized loosely for sequential or periodic learning experiences. The workbook moves from the city and its build-ings and space to forest communi-ties and other natural environments to water, food chains, air, noise, ani-mals, plants, and recycling. There are workbook exercises, activity suggestions, and an informative, easy-to-read text. The illustrations are simple and might even encourage coloring by the younger students.

Eco-Antics can be worked from front to back in a class over several weekly sessions or assigned to stu-dent pairs or teams to complete independently. No teacher prepara-tion is required, and no teacher is required for the older elementary students. Sections can be read to younger students and filled in as a group.

Eco-Antics is particularly valuable in its ability to enlarge city kids' per-spective on their environment. *Eco-Antics* succeeds in portraying the multifaceted dimensions of the urban environment which includes natural and built elements and systems.

GRADE LEVEL

K–3	●
4–6	●
7–8	
9–12	
College–Adult	

SUBJECT AREA

Art	
Language Arts	
Math	
Science	
Social Studies	●

RESOURCE TYPE

Teacher Guide	
Student Resource	●

SETTING FOR USE

Classroom	●
Studio	
Lab	
School Grounds	
Field Trip	●

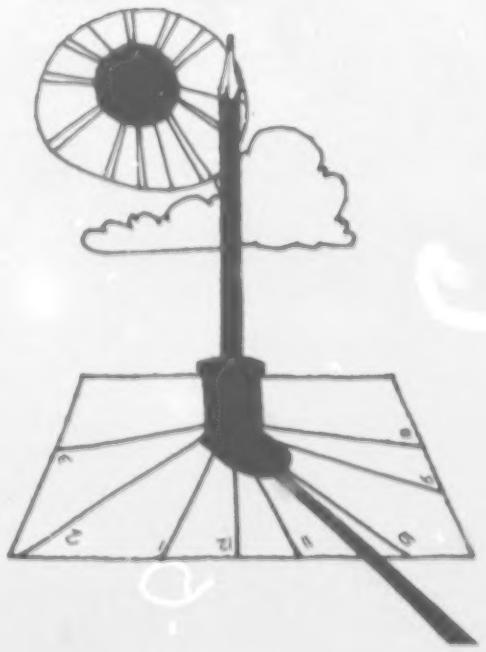
An Activity To Try

Timing the Sun

Think what your environment would be like without the sun! The sun rises and sets each day because the earth spins around once every twenty-four hours. When the part of the world you are in is facing the sun, it is daytime. It is night-time when your part of the world is away from the sun.

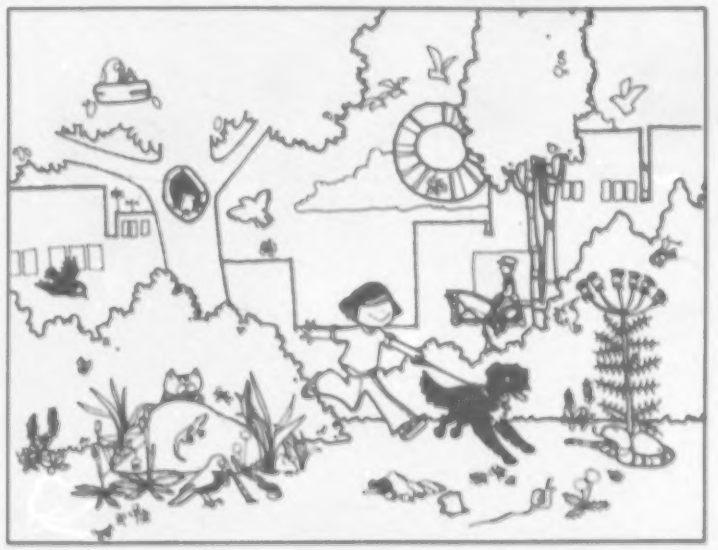
You can make your own sun-clock out of a spool, a pencil, and a piece of paper, like this. Put them on a sunny windowsill and trace the shadow the pencil makes at different times of the day. Now you can tell what time it is with your sun-clock.

MAKE A CLOCK



Shared Environments

Do you really see? Your environment is everything around you. It is living things and non-living things. How many living things can you find in this picture? What do they need in order to live? Take a close look at your own environment. Who shares it with you?



The American Institute of Architects

Encounter with the Northwest Environment: Natural and Urban

Environmental Planning and Management Associates

1980

Softbound, 130 pp., maps and illus.

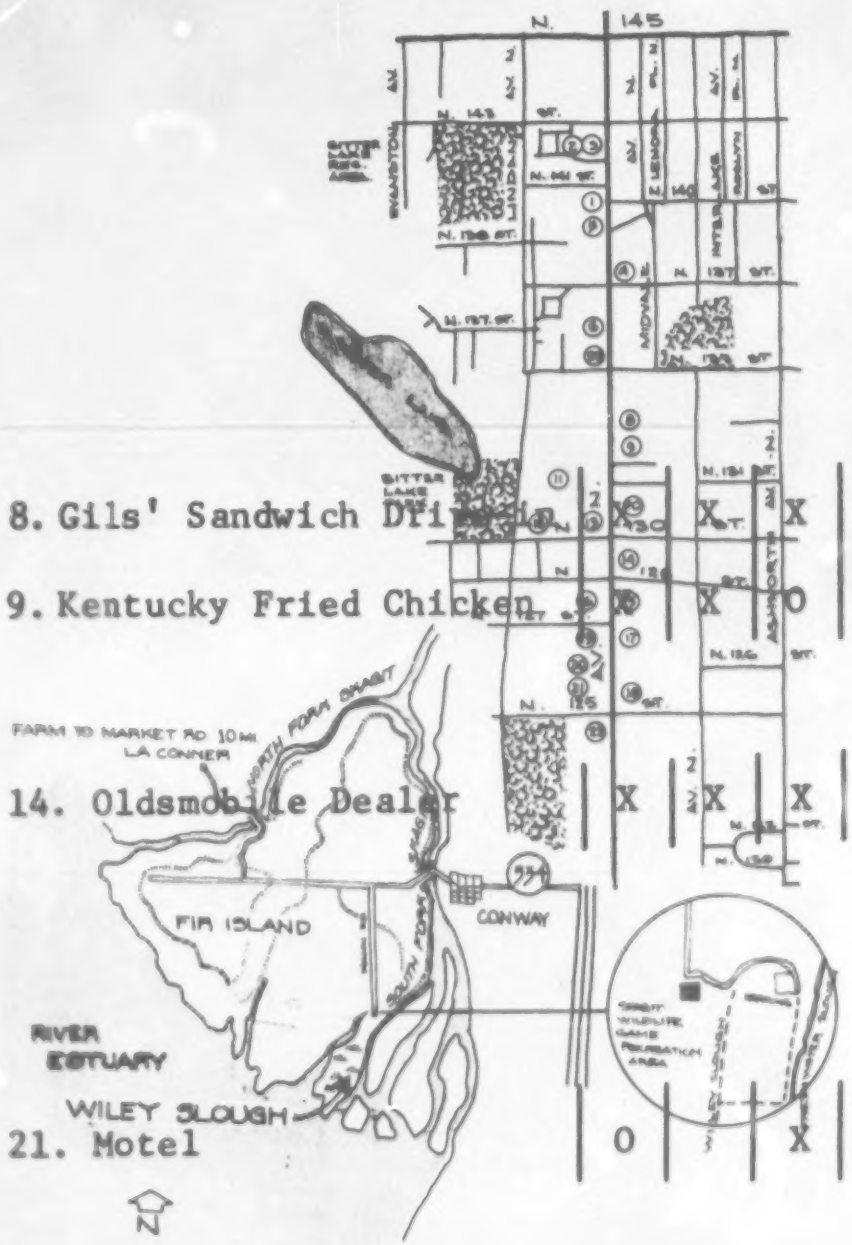
Superintendent of Public Instruction
State of Washington
Old Capitol Building
Olmypia, WA 98504

Available through state environmental Education Coordinators at cost of printing.

Also available from
ERIC
Clearninghouse for Science, Mathematics and Environmental Education
1200 Chambers Rd.
Columbus, OH 43212

Encounter is a perfect model for any school system that wants to set up a network of environmental study sites. It really can be transferred to any "environmental corridor."

Environmental education state coordinator



This resource provides two separate although complementary guides: one for natural environments and one for cities. The first is organized around environmental types which are then classified according to levels of human impact and/or use into a selection matrix. Site descriptions include sections on location, description, educational approach, special conditions, and facilities.

The urban environment is initially organized around generalized urban land use, the components of which are further described in terms of their history, the physical nature of the setting, societal function, physical structures, networks, and open space. A selection matrix is devised to enable the identification of several learning sites within each urban component. A system of learning stations is then demonstrated for Seattle.

The Sourcebook The American Institute of Architects

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Encounter with the Northwest Environment, Natural and Urban provides a framework for exploring a regional environment and setting up a system of environmental learning sites. Though specifically organized around an "environmental corridor" of study sites along a north/south route in the state of Washington, *Encounter* should help teachers anywhere develop a comprehensive approach to learning about natural and urban environments in the field.

Produced by educational consultants and environmental planners and managers, *Encounter* is a valuable tool for any teacher interested in exploring the environment beyond more than one afternoon field trip, and an excellent working model for environmental study site development for school systems around the country.

In addition, *Encounter* would be excellent for senior high school students to use as a guide to set up a system of study sites for the rest of the school. There is no reason that students cannot duplicate this effort. The attendant research, mapping, overlays, etc. would provide an indepth experience for the students and result in a valuable offering for the other classes.

GRADE LEVEL

K–3	
4–6	
7–8	
9–12	●
College–Adult	●

SUBJECT AREA

Art	
Language Arts	
Math	
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

Classroom	
Studio	
Lab	
School Grounds	
Field Trip	●

An Activity To Try

[Ed.'s Note: Because of the nature of this resource, no activity accompanies this entry.]

Environmental Education Activities Manual

William B. Stapp and Dorothy A. Cox

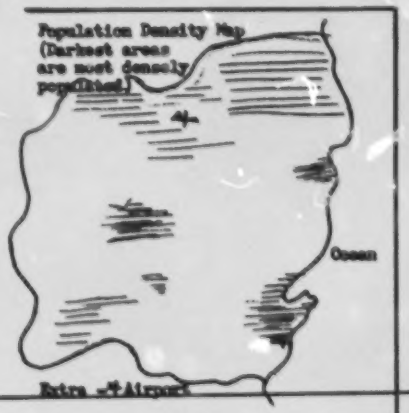
1979

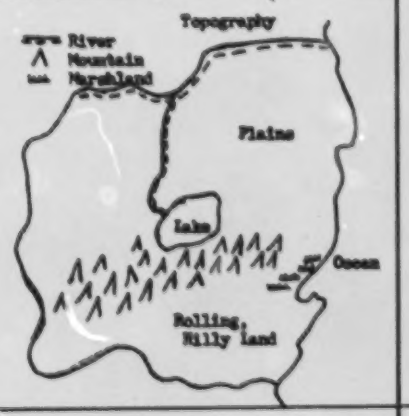
Softbound, 764 pp., illus.

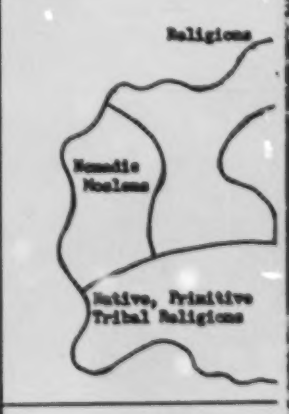
William B. Stapp/Dorothy A. Cox
32493 Shady Ridge Drive
Farmington Hills, MI 48108

Stapp and Cox bring to environmental education a holistic approach. It is not environmental science but rather a mix of science, social studies, arts, and economics with particular attention paid to skills in decision making. The activities lend themselves to being tailored to the needs of the learner. We are in a rural school system and these materials can be adapted for our use very easily.

Ecology director in a county school system







The activities in this manual are self-contained units that supply data, tables, maps, patterns or whatever kinds of information are required to carry out the activity. These maps, for example, are included in an activity on mass transit which was designed to develop students' abilities to collect, organize and analyze data; to generate alternative solutions; and to draw warranted conclusions.

The Environment The American Institute of Architects

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Environmental Education Activities Manual comprises materials needed for teachers and curriculum specialists to integrate an environmental education model into the learning activities of students K–12. The model is based on the spaceship-earth idea, and it may be integrated into existing subject areas with the help of the concepts, internalization processes, and teaching methods provided in a program context focusing on improved environmental quality.

The basic premise of the program is that students must be continuously and actively engaged in learning about and dealing with their environment by employing problem-solving skills.

The material is organized around understanding five major concepts—ecosystem, population, economics and technology, environmental decisions, and environmental ethics—development of problem-solving skills, values clarification, and "environmental encounters"—through which students become involved in exploring and critically evaluating their environment and existing environmental problems. Activities are designed for lower, middle, and upper elementary grades, and junior and senior high school. A topical index and a list of environmental education resource materials round out this volume.

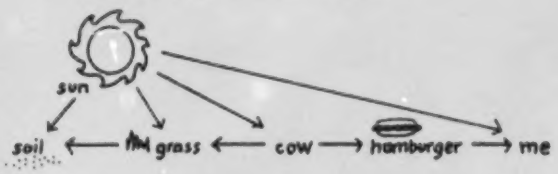
Each activity stands alone and is limited to one subject area of application. Each activity, taking one or more class periods to complete, contains specific sequences that structure the environmental experience. Generally, the activities are project oriented, involving students in exploring, evaluating, and planning for solutions. The use of a single format permits efficient review and use.

GRADE LEVEL	
K–3	●
4–6	●
7–8	●
9–12	●
College–Adult	
SUBJECT AREA	
Art	●
Language Arts	
Math	●
Science	●
Social Studies	●
RESOURCE TYPE	
Teacher Guide	●
Student Resource	
SETTING FOR USE	
Classroom	●
Studio	
Lab	
School Grounds	●
Field Trip	●

Activities To Try

Where Lunch Comes From

1. Concept to be developed: *Ecosystem*
2. Understanding to be developed: Plants capture sunlight and use it to help them make the food and oxygen that people and other animals need in order to live.
3. Time: One hour
4. Materials:
   a. Blackboard
   b. Paper
   c. Pencils and crayons
5. Procedure:
   a. Have the children draw food they eat for lunch.
   b. On the blackboard, write a lunch menu.
   c. Draw the following on the board:



   d. List some of the suggestions from what the children drew (For example: roast beef, chicken, pork chops, etc.).
   e. Point out how each food can be linked back to the soil, plants, and then to the sun's light.
6. Discussion Questions:
   a. Think of your favorite meat.
   b. What animal does it come from?
   c. What does that animal eat? (Almost always some form of plant)
   d. From where do plants obtain their basic needs?
   e. Why do we need the sun's energy in order to get a hamburger?

Investigating the Traffic Patterns of the School Parking Lot

Behavioral Objectives

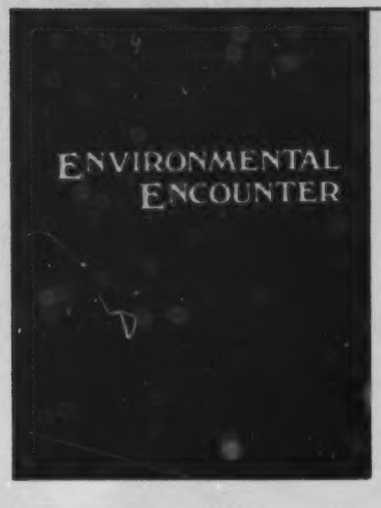
At the completion of a successful encounter, the student should be able to:

1. List (number) types of pedestrian traffic occurring in the parking lot.
2. List (number) types of vehicular traffic occurring in the parking lot.
3. Make a diagram of the parking lot and show the present pedestrian and vehicular traffic patterns.
4. Describe in writing (number) conflicts between pedestrian and vehicular traffic patterns.
5. Identify what he believes is the best reason why conflicts should be reduced or eliminated.
6. Describe in writing a plan for eliminating or reducing the conflicts in the parking lot.
7. List (number) major steps of implementing your plan to "Improve the Traffic Flow in the School Parking Lot."

Activities

1. Initiate a class discussion about the traffic in the school parking lot.
   a. What kinds of traffic are there in the parking lot?
   b. Who are some of the pedestrians who have to walk there?
   c. Who are some of the drivers of vehicles that drive there?
   d. Have there ever been any accidents or near accidents in the parking lot?
   e. Do people and vehicles ever get in each other's way?
   f. Do you think anything could be done to improve the traffic patterns?
2. Visit the parking lot to make a drawing of the lot and its traffic patterns.
   a. Where do the people walk when leaving their cars?
   b. Where do children walk when leaving the buses?
   c. Do children walking from home have to cross any part of the parking lot?
   d. Where do the buses drive?
   e. Where do the people coming to work drive and park?
   f. Where do parents bringing children to school drive?
3. Study the pedestrian and vehicular traffic patterns on the drawings of the parking lot.

The Sourcebook The American Institute of Architects



Environmental Encounter
Experiences in Decision-making for the Built and the Natural Environment

Joanne Henderson Pratt, James Pratt, Sarah Barnett Moore, and William T. Moore

1979

Softbound, 168 pp., illus.

$14.95

ISBN 0-9601902-0-1

Reverchon Press
PO Box 19647
Dallas, TX 75219

This is a great idea book for teachers. We have used several of the activities with our gifted middle school kids and have found them very effective. The format is easily reproducible and the teacher doesn't have to do a lot of preparation. The visuals and the layouts are easily transferable to any community. We found it worked very well in our area.

Middle school science teacher

The chair
A funny thing about a Chair:
You hardly ever think it's *there*.
To know a Chair is really it,
You sometimes have to go and sit.
Theodore Roethke

What makes a favorite chair special?
How do the
shape
size
scale
texture
color
structure and
manufacturing proc
contribute to the de
of these chairs? What is the
intended function of each chair?
Would the function change if the
context of the chair were different?

The Sourcebook The American Institute of Architects

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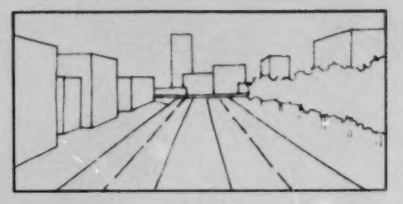
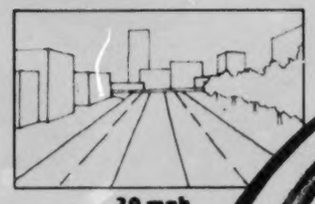
How do we perceive an object such as a chair? What are its components in terms of design and function? How do they relate to the whole? How does movement affect our perception of a place and how does our movement affect the design of the environment? What kinds of legislation determine our environment and how can we participate in shaping these codes? These are some of the kinds of questions underlying the activities in this book—activities that are designed to sharpen the reader's environmental perceptions and decision-making abilities.





"Keep this under your hat, men . . . but they say we're spending too much time under here."

Environmental Encounter provides a well-constructed and tested set of learning activities about the environment. In its own words, *Encounter* "leads the participant through a series of experiences so exaggerated that they will be able to organize and cognify their impressions (about) the impact the individual has on the environment as well as the impact the environment has on the individual."

The twenty-nine chapters are interwoven with several "conceptual strands": orientation to the environment, receiving and organizing sensory data, living in the community, and synthesis of individual experiences with both the immediate environment and the total environmental system in which we live.

Each chapter of *Encounter* has a teaching core of one to ten learning experiences that vary in length from one hour to one week. The chapters are enhanced by graphics and marginal comments by the authors, and each contains suggestions for further exploration, a checklist of questions to assess student learning, and additional background resources.

This resource may be expanded into a full course or abbreviated for workshop training or seminars. The material can be adapted by trained teachers for use with primary and secondary students as well as college students.

Encounter embodies the multidisciplinary background of its authors who together span the fields of architecture, history, psychology, and science.

GRADE LEVEL

K–3	
4–6	
7–8	●
9–12	●
College–Adult	●

SUBJECT AREA

Art	●
Language Arts	●
Math	
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	●

SETTING FOR USE

Classroom	●
Studio	●
Lab	●
School Grounds	●
Field Trip	●

An Activity To Try

Ordering Random Lines to Make Them Memorable

Hand out two sheets of paper and a broad-line pen to each person. Ask each participant to "Draw one line on your paper. There is only one condition that must be met: the ends of your line must begin at one edge of your paper and terminate at one of the other three edges."

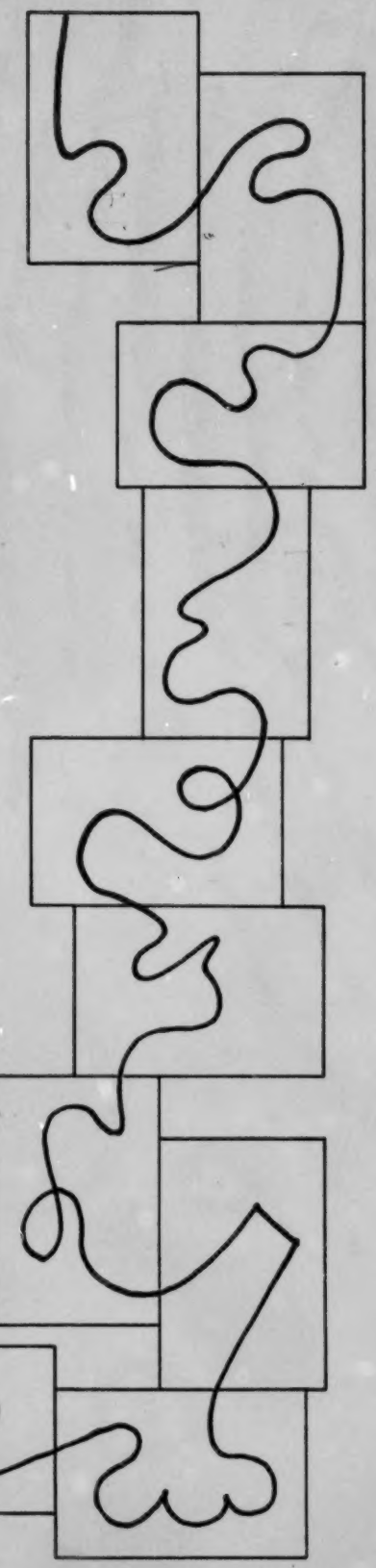
Divide into groups of five or six. Ask each group to "make order," that is, an array, out of their papers. (Possible solutions will include geometrical patterns, a straight line, or even the arrangement of all the papers into a stack.)

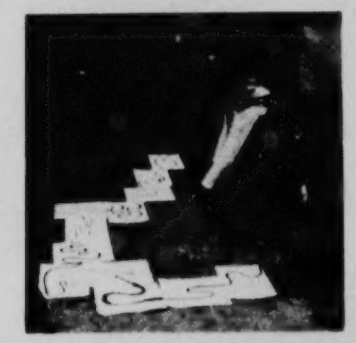
Ask each group to visit all the other group arrays. Then ask each person to draw from memory (without referring to them a second time) as many of the arrays as he is able. With the whole group, compare these sketches with the original arrays still in place.

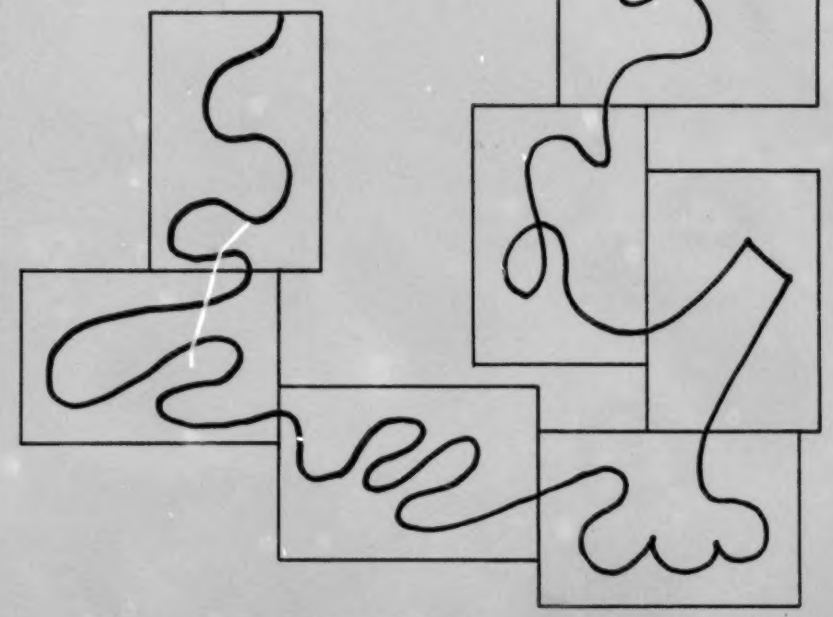
"Which arrays proved easiest to remember? What makes them memorable?" (In general, the most highly ordered pattern will be the most memorable.) Still referring to the original arrays:

"Which array do you like the best? Is it also the one that was easiest to remember? Why or why not?" (Perhaps less order is more interesting.) "When you look at the whole, which do you see, an 'object,' or the 'field'? Which has the most content? Does more information make a more interesting array? Can there be too much information?"

Mix up the arrays of papers and collect them into one pile. Throw down one paper at a time and afterwards ask the group if they can remember the number of papers and the configuration of each line. (There is an order but there are so many variables we cannot perceive any order. Thus we are disoriented and have difficulty remembering specific patterns of lines.)







The Sourcebook The American Institute of Architects

Essence I and II

Robert Samples

American Geological Institute

1971

Cardboard box of environmental study cards

I, $30.00; II, $50.00

Addison-Wesley Publishing Co.
2725 Sand Hill Rd.
Menlo Park, CA 94025

The cards allow children to use a whole variety of learning styles and they encourage kids to direct their own education. We have used them extensively. They provide a comfortable first step for teachers moving from very directed teaching assignments to more open teaching styles.

Environmental education
teacher trainer

Individual activity cards emphasize awareness with actions such as speaking only in the first person for a period, a day, or a week, and then keeping a record of the number of times during that period that the second or third person is used by someone; or, doing something nice for someone in school but keeping it a secret ("What did you find out about yourself . . . . What makes keeping a secret difficult/"); or, making some place in the room more beautiful ("Is it possible that in making a place more beautiful for yourself you could have made it less beautiful for others?").

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Essence employs a process approach to teaching about the world of human interactions and the environment. *Essence* provides teachers with multiple activity cards to support an alternative, open access teaching strategy.

The author states, "This is not a teacher's guide," and then extends that notion through more than fifty activity cards (with over 200 total activity suggestions in *Essence I* alone) organized in no apparent order. These cards are designed to inspire and reinforce teachers' involvement in affective, cognitive, and psychomotor modes of learning. This is an educational process built on trust between teachers and their students and encouragement of student-directed paths through subject areas and content. The activity cards are intentionally ambiguous, placing the burden of interpretation on the teachers and students. This is meant to engage them actively in the design and direction of their own learning experiences.

The activities take the students in and out of the classroom, around the school, around their homes and neighborhoods. The processes and skills employed range from collecting, observing, and photographing, to describing, proving, and enjoying.

The subject matter is the environment; its scope and depth determined specifically by the students themselves as they carry out the activity suggestions.

The *Essence* materials, alternatively known as the E.S. cards or Environmental Studies Kit, is the product of the Environmental Studies project sponsored by the American Geological Institute and supported by the National Science Foundation.

GRADE LEVEL

- K–3 ●
- 4–6 ●
- 7–8 ●
- 9–12 ●
- College–Adult ●

SUBJECT AREA

- Art ●
- Language Arts ●
- Math ●
- Science ●
- Social Studies ●

RESOURCE TYPE

- Teacher Guide ●
- Student Resource ●

SETTING FOR USE

- Classroom ●
- Studio ●
- Lab ●
- School Grounds ●
- Field Trip ●

Activities To Try

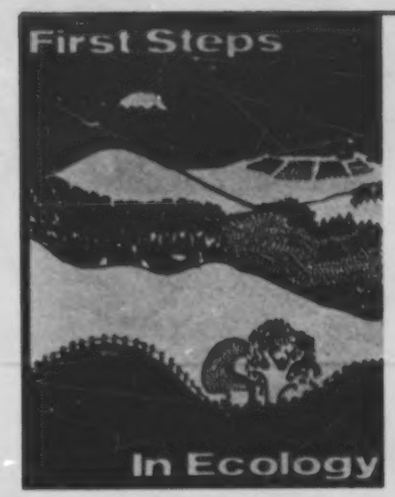
Sound Sense

Go outside with a tape recorder.
Find and bring back sounds you like and dislike.
Find and bring back morning, day, and night sounds.
How does a sound make you feel?
Do the same sounds create the same feelings in everyone?
Record sounds of work, play.
Make music from your collected sounds.
Collect things that make sound and make a sound sculpture.
Write a poem about sounds that creates the same feelings the sounds did.

Underground

Try water witching.
What do man-made subterranean things tell about society?
Design a better subway, water system, sewer system, etc.
Represent surrealistically the thing mapped.

The Sourcebook The American Institute of Architects



First Steps in Ecology: A Guide for the Elementary Grades

Beverly Bense, Holly Mines, Jo Mueller, Susan Nemir, and Toby Pohl

Eco-Kids Environmental Education Program
The Ecology Center, Berkeley

1975

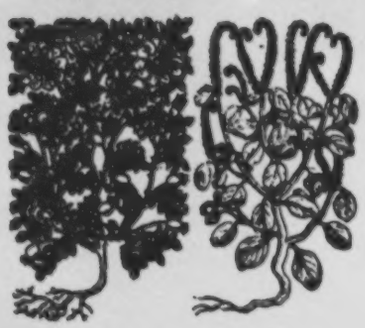
Softbound, 118 pp., illus.

$4.00

Ecology Center
2701 College Ave.
Berkeley, CA 94705

First Steps *is a practical teaching guide on environmental issues with some classic, original activities.*

Elementary school teacher



The Smithsonian The American Institute of Architects

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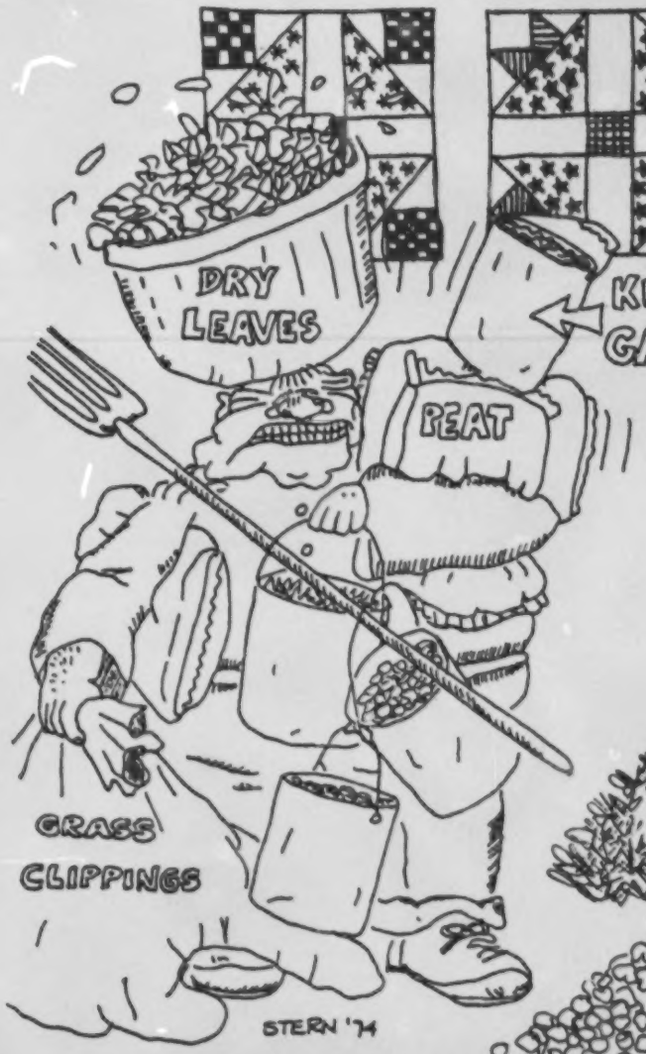


Building children's sense of environmental concern is a major commitment for the Ecology Center; thus key concepts, such as recycling, are presented through various activities which support different kinds of learning experiences. The Compost Coloring Book can be used as a process-oriented class project or as a play activity with a message. Quilting may spark individual art projects or provide a theme for class discussions or individual research and writing activities. Children's artwork and illustrations from old sources attest to a resource that has been enriched by many caring contributors.

First Steps in Ecology provides eighteen environmental problem units each with specific objectives for making the world a more harmonious and beautiful place to live. *First Steps* emphasizes participatory experiences for students enabling them to develop an awareness of critical environmental issues and man's dependence on other living things.

First Steps is a teacher's aid which allows an integration of the units into specific subject areas of art, math, language arts, and sciences. The format of each activity features key words, student experiences, and background summary for teachers in addition to the usual teaching-aid content. A bibliography and glossary are also useful contributions. Masters for a "Compost Coloring Book" are included in this material.

Although each unit is free-standing, flexible organization is possible, allowing for topical groups such as food, recycling, nature, energy, pollution and litter, or subgroups of each classification. Follow-up sections encourage additional activities.

First Steps is the result of a year's experimentation in twenty-five K-3 classrooms in the Berkeley Unified School District by Berkeley's Ecology Center staff. The diversity of the large team that developed this resource is reflected in the variety of valuable ways to teach about the environment that are collected here.

GRADE LEVEL

K-3	●
4-6	●
7-8	
9-12	
College-Adult	

SUBJECT AREA

Art	
Language Arts	
Math	●
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

Classroom	●
Studio	
Lab	
School Grounds	●
Field Trip	●

An Activity To Try

School Yard Eco-systems

Objective
To recognize that communities of interdependent living things exist in all environments.

Summary
Working in five groups, the children perform investigations outside, then return to the classroom to share their findings. The five groups are: Seed Scouts, Hula-Hoop Hurlers, Decay Detectives, Animal Hunters, Bug Eyes. (Ed.'s note: Only three are included in this example.)

Key Words
decay decompose ecosystem environment lichen mildew mold niche

Advance Preparation
Materials: 5 activity sheets, one per group (included)

Group I: Seed Scouts
trowel
soil container

Group II: Bug Eyes
trowel
jar
sample container

Group III: Decay Detectives
sample container

Teaching Suggestions
Introduction
Do you think a community of living things exists in the schoolyard environment?
Do you think we can find food chains here?

Procedure
Outline activity for children. Each group will:
- select a recorder to take notes
- read its activity sheet before going outside
- go outside and perform its investigation
- share its findings with the rest of the class on its return.

Divide children into three groups.
Pass out activity sheets and equipment.

Group I: Seed Scouts

1. Find 3 seeds. When you go back to the classroom, take your seeds and tape or glue them in the boxes below.

_____	_____	_____

2. If you know the name of the plant that your seed came from, write it on the line under the box.
3. Guess how the seed got where you found it. (Hint: by a bird, an animal, a person, through the air)
   seed 1 seed 2 seed 3
   _____ _____ _____
4. Would it grow where you found it?
   Seed 1: yes___ no___
   reason _____
   Seed 2: yes___ no___
   reason _____
   Seed 3: yes___ no___
   reason _____
5. Put some good soil that has no plants in it in your container. Take it back to the classroom and keep it watered. Put it in a sunny spot. Watch what happens.

Group II: Bug Eyes

1. Find two bugs. Answer all the questions below about your bugs.

a. It feels like:
b. How does it move?
c. Where is its home?
d. How does it protect itself?
e. What does it eat?
f. Will it change into something else?
g. How might it die?
h. What will happen if it dies and stays there?

	Bug 1	Bug 2
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		

i. Can you find its:

eyes		
nose		
mouth		
feet		

2. Make a food chain for one of the bugs. (Clue: What does it eat? What eats it?) Draw it on the back of the paper.
3. Bring a soil sample back to the classroom. On a white piece of paper, sift through the soil for bugs. Put bug eggs you find in a jar and see if they hatch.

Group III: Decay Detectives

1. Look for signs of decay (rot). Check shady, moist areas and see if you can find mushrooms, molds, diseased plants, mildew, rotting wood, moss, or lichen. If you can, take three samples of decay back to the classroom with you and tape or glue the samples in the boxes.

2. Answer the following questions about your samples:
   a. What color is it?
      Decay 1_____
      Decay 2_____
      Decay 3_____
   b. Where did you find it?
      Decay 1_____
      Decay 2_____
      Decay 3_____
   c. Is it wet or dry?
      Decay 1_____
      Decay 2_____
      Decay 3_____
3. Turn over a rock and look for decaying things. What else did you find under the rock?

The Sourcebook The Americas Institute of Architects

Green Box

Humboldt County Office of Education
Environmental Education Program
Eureka, CA

Cardboard box with student cards and booklets, illus.

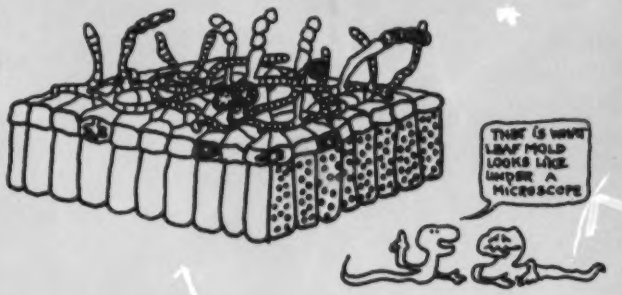
$52.95 (Sample, $3.00 plus postage)

Humboldt County Office of Education
Environmental Education Program
901 Myrtle Avenue
Eureka, CA 95501

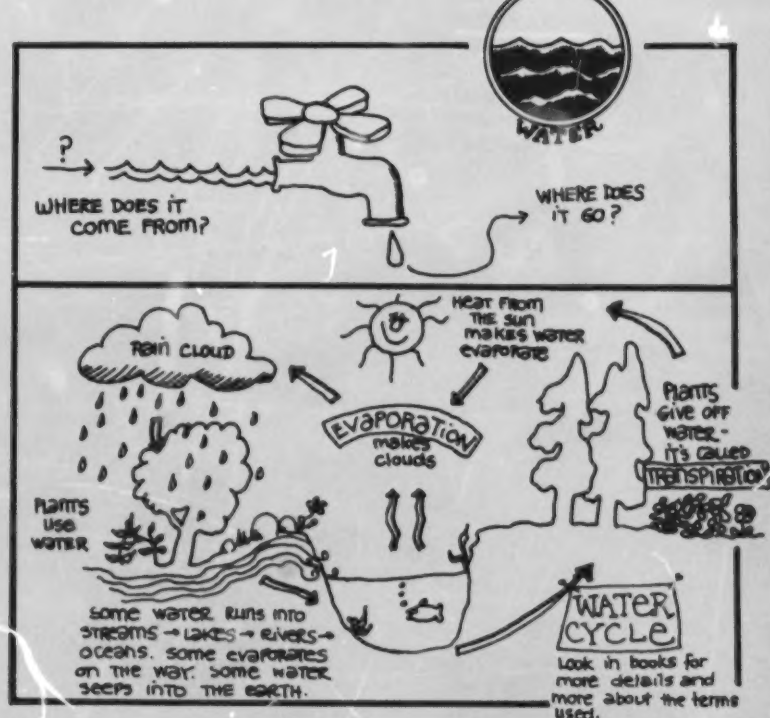
Not only is the Green Box *delightful to use, it's handy. There are so many things to do and it's carefully organized and indexed by topic, grade levels, and so forth. The introductory booklet explains how to acclimate the students before they go outside and then, once there, how to work as a team.*

Fifth grade teacher

WHERE would you build your DREAMHOUSE?
city
WHAT WOULD YOU NEED IF YOU WERE TRAPPED INSIDE A MAYONNAISE JAR?
THINK
HEAD QUARTERS
CENTRAL AWARENESS



Do cards are divided into nine topical categories for K-3, 3-6, and 5-8 activities. Thus, over the years, students can cycle through the topics without repeating the same activity sequence. Think *cards are structured around the basic conceptual dimensions of the state of California's Ekistics program: awareness, use, interdependence, change and adaptation. These cards are used to extend activities already conducted in the* Do *series and to link up with subsequent* Show *cards, which offer alternative modes of communicating the student's experiences, from writing and music to mapping and building.*


WATER
?
WHERE DOES IT COME FROM?
WHERE DOES IT GO?
HEAT FROM THE SUN MAKES WATER EVAPORATE
RAIN CLOUD
EVAPORATION makes clouds
PLANTS GIVE OFF WATER - IT'S CALLED TRANSPIRATION
PLANTS USE WATER
SOME WATER RUNS INTO STREAMS → LAKES → RIVERS → OCEANS. SOME EVAPORATES ON THE WAY. SOME WATER SEEPS INTO THE EARTH.
WATER CYCLE
Look in books for more details and more about the terms used.

The Sourcebook The American Institute of Architects

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Green Box contains an "open access curriculum" for environmental education. Through carefully designed and organized multifaceted activity cards, *Green Box* opens up a world of exploration and fun.

This resource emphasizes humanistic principles of learning and sets as its goal the nurturing of children to become "environmentally healthy adults"—persons who hold a holistic view of the world, have mastered problem-solving skills, demonstrate consistency between values and actions, possess a self-confidence in their ability "to make a difference," and continue to expand their experiences and interactions with both new and familiar environments.

Toward this objective, *Green Box* constructs a curriculum system geared to the processes of learning as well as to the content. One hundred seventy-eight illustrated and durable activity cards provide doing, thinking, and showing experiences that employ school and classroom settings, environmental sites in the community, and outdoor wilderness environments. Students are encouraged to open the box themselves and cycle through the sequence of Do, Think, and Show activities on their own, in small groups ("six-packs"), or as a class.

For anyone interested in limbering up their teaching methods and experimenting with activity cards and student-directed learning, *Green Box* is a turn-on. For more in-depth preparation and training, an in-service training program is available through the Humboldt County Office of Education.

GRADE LEVEL

K–3	●
4–6	●
7–8	●
9–12	
College–Adult	

SUBJECT AREA

Art	
Language Arts	
Math	
Science	
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	●

SETTING FOR USE

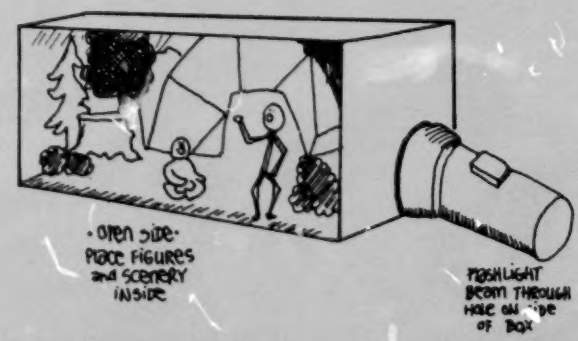
Classroom	●
Studio	
Lab	
School Grounds	
Field Trip	●

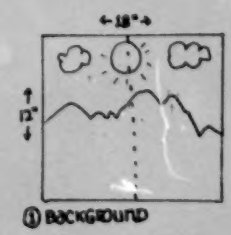
An Activity To Try

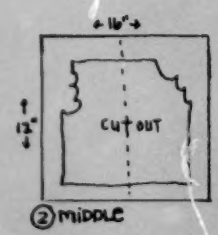
Diorama

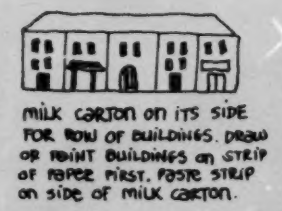
A diorama is a little scene in a box, like a stage setting. Get a cardboard carton from the grocery store. The opening may be made to look like a stage, even with curtains. The scene may be made from colored construction paper or you may want to construct three-dimensional figures. For special lighting effects a hole may be made at one side for a flashlight beam or an electric bulb; also Christmas tree lights may be hidden at the top front or behind the scenery at the back.

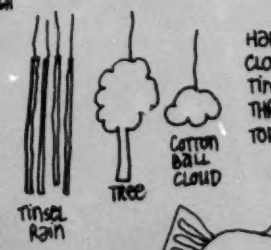
One kind of diorama is a three-dimensional picture made with three sheets of paper. Begin with 3 pieces of 12″ × 18″ construction or poster paper. Leave one full size; cut 2 inches off the length of one; cut 4 inches off the length of the third. Fold each sheet in half as shown on the diagrams. Draw or paint a background scene on the largest sheet. Make a cut-out scene on the smallest sheet showing things close to you. Make another cut-out scene on the middle-length sheet showing things between the close scene and the background. Paste the three scenes along the 12 inch edges so that your final scene stands by itself as shown in the diagram.

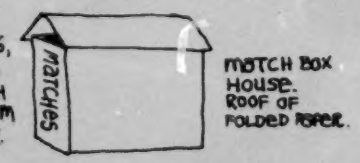


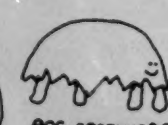


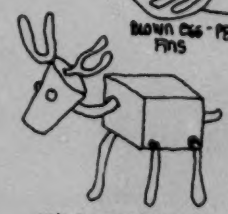


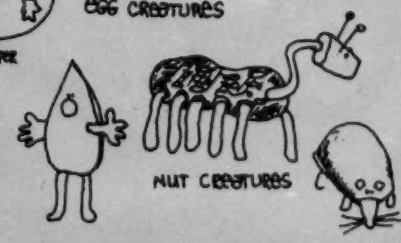

MILK CARTON ON ITS SIDE FOR ROW OF BUILDINGS. DRAW OR PAINT BUILDINGS ON STRIP OF PAPER FIRST. PASTE STRIP ON SIDE OF MILK CARTON.



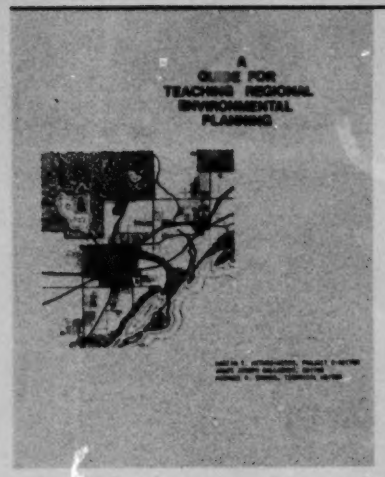








The Sourcebook The American Institute of Architects



A Guide for Teaching Regional Environmental Planning (with Supplement)

Martin T. Heatherington,
James Joseph Gallagher, and
Michael R. Thomas

Science and Mathematics Teaching Center
Michigan State University

1978, 1979

Softbound, 52 pp. (guide),
98 pp. (supplement)

Free in limited quantities (also available from ERIC)

Martin T. Heatherington
Science and Mathematics Teaching Center
Michigan State University
E-37 McDonel Hall
East Lansing, MI 48824

ERIC
Clearinghouse for Science, Mathematics and Environmental Education
1200 Chambers Rd.
Columbus, OH 43212

I used this guide in a course on Environmental Design with my eleventh and twelfth graders. It was useful in providing a variety of learning opportunities from which my kids could choose. I particularly liked the guide because it was holistic and interdisciplinary. It was very adaptable.

Environmental education teacher

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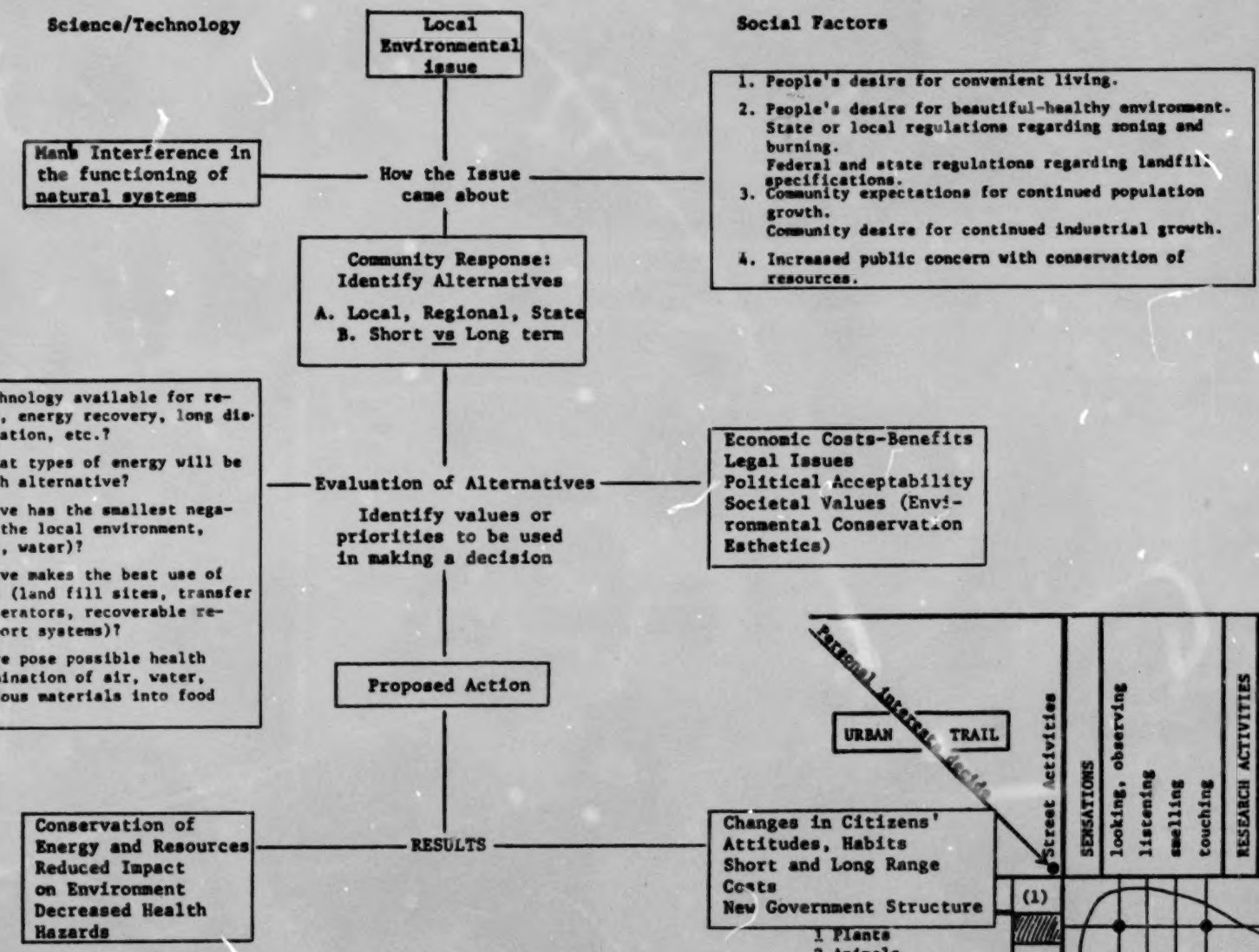
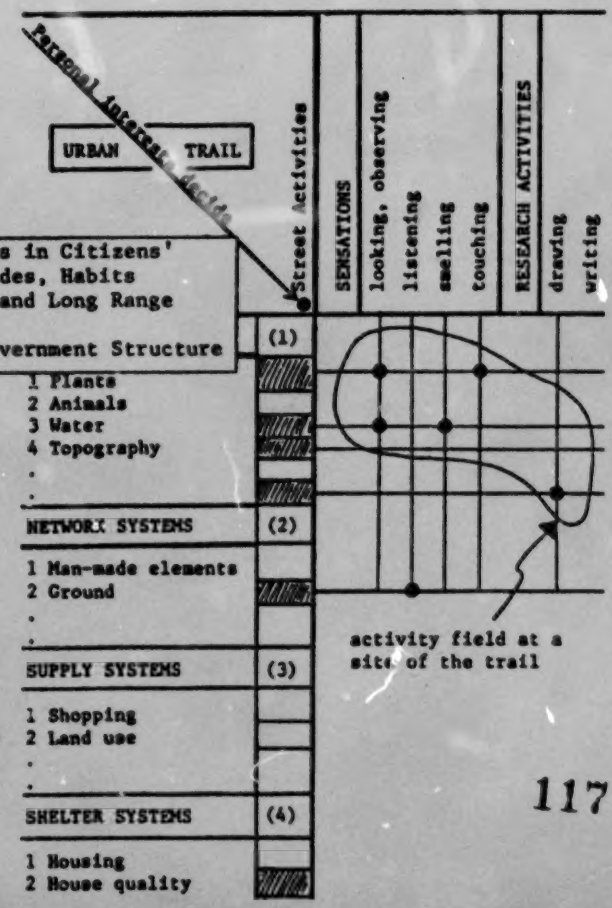
The Sourcebook

GENERAL MODEL


Science/Technology
Local Environmental issue
Social Factors
1. People's desire for convenient living.
2. People's desire for beautiful-healthy environment.
State or local regulations regarding zoning and burning.
Federal and state regulations regarding landfill specifications.
3. Community expectations for continued population growth.
Community desire for continued industrial growth.
4. Increased public concern with conservation of resources.
Man's Interference in the functioning of natural systems
How the Issue came about
Community Response: Identify Alternatives
A. Local, Regional, State
B. Short vs Long term
1. Is reliable technology available for resource recovery, energy recovery, long distance transportation, etc.?
2. How much and what types of energy will be required by each alternative?
3. Which alternative has the smallest negative impact on the local environment, (e.g. land, air, water)?
4. Which alternative makes the best use of local resources (land fill sites, transfer stations, incinerators, recoverable resources, transport systems)?
5. Does alternative pose possible health hazards (contamination of air, water, entry of hazardous materials into food chains)?
Evaluation of Alternatives
Identify values or priorities to be used in making a decision
Economic Costs-Benefits
Legal Issues
Political Acceptability
Societal Values (Environmental Conservation Esthetics)
Proposed Action
Conservation of Energy and Resources
Reduced Impact on Environment
Decreased Health Hazards
RESULTS
Changes in Citizens' Attitudes, Habits
Short and Long Range Costs
New Government Structure

This diagram indicates how a local environmental issue might develop and how alternative solutions for the issue might be evaluated. The center column illustrates the historical progression of the issue, while the other columns indicate contributing scientific/technologic and social factors. Here, two of these items have been filled in from a model which describes typical solid waste management issues. In another part of this guide, a unit on the urban-trail as a means of observing, understanding and appraising the urban environment is documented. Instructions for developing a point-of-interest matrix are supplied as an aid in developing activities for the urban trail.



A Guide for Teaching Regional Environmental Planning and its *Supplement* introduce educators to the planning process, to seven basic topics concerning regional environmental planning (land use, solid waste disposal, waste water treatment, air and water pollution, water supplies, recycling, and transportation), and to mechanisms for incorporating teaching units into secondary education curriculum.

The *Guide* offers background information on regional environmental planning in its first two sections and instructional strategies and plans for teaching the subject in the final section. The *Supplement* provides an issue-oriented approach for incorporating environmental planning concepts into curricula.

Both materials can be used effectively for developing lesson plans, projects, and units in regional environmental planning. While there are some direct examples of activities and projects in the material, this resource's strongest suit is as background reading for teachers interested in the field and in enlarging the scope of their existing curriculum, whether social sciences, economics, government, politics, or history. Particular attention is paid to land-use issues; data processing and environmental laws and regulations are treated thoroughly.

These materials are the result of two years of workshops, held at Michigan State University, which were conducted and documented by a team of planners and teacher-educators. They succeed in being practical, useful documents for teachers, administrators, in-service trainers, and teacher educators.

GRADE LEVEL

K-3	
4-6	
7-8	
9-12	●
College-Adult	

SUBJECT AREA

Art	
Language Arts	
Math	
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

Classroom	●
Studio	
Lab	
School Grounds	
Field Trip	●

An Activity To Try

Learning from the Urban Trail

Work on the Trail
The trail now leads us in front of a gas station at a busy road.
Tasks:
Count the cars which pass within five minutes in both directions.

Count the number of persons in each car and figure out the average number per car.

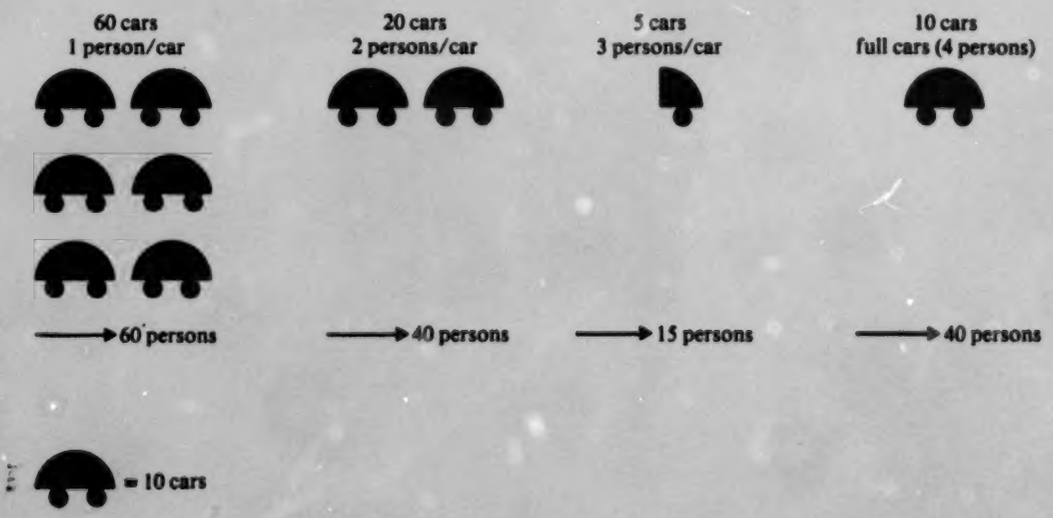
Count the cars stopping at the gas station. How much gasoline (regular and unleaded) did they consume? Ask the drivers about the gas/mileage ratio of their cars.

Close your eyes for two minutes and use the other senses. Write down six words that describe your sensations.

Work in the Classroom and Further Activities
Tasks:
List the sensations of the students, mark them with + (good) or − (bad) signs; try to find out what caused the positive and negative feelings.

Let students collect newspaper articles which deal with oil shortage and gas prices. Discuss these issues.

Illustrate the passenger/car ratio in a simple graph as follows:



The Sourcebook The American Institute of Architects

Historic Preservation Education

Historic Preservation Education Curriculum Materials

Carol D. Holden, Gary L. Olsen, Michele R. Olsen, and Raymond H. Lytle

1980

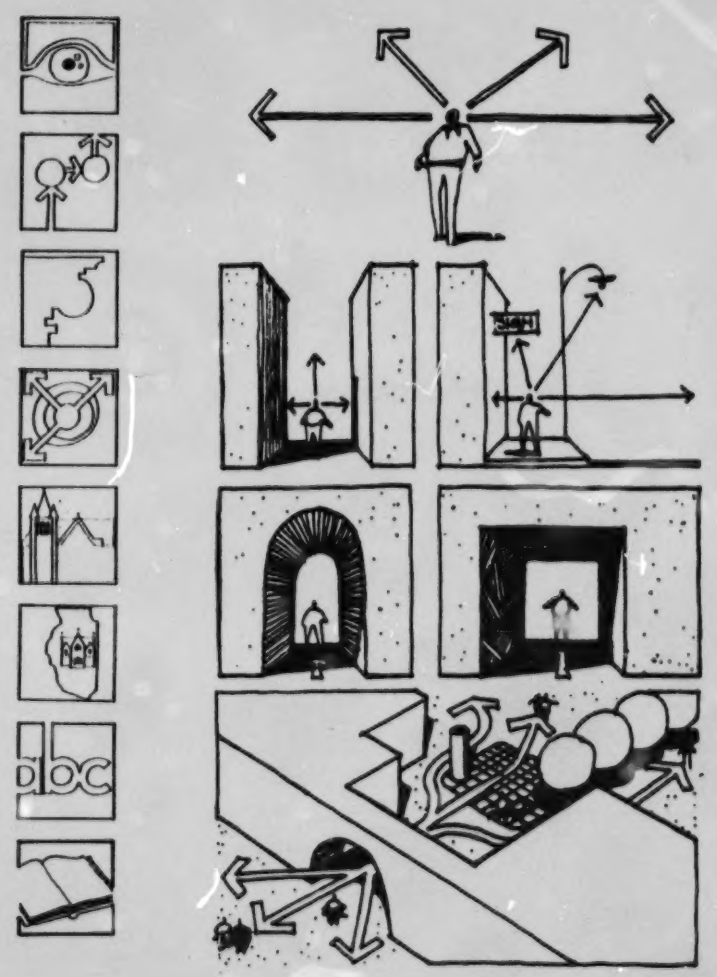
Spiral bound, 155 pp., illus.

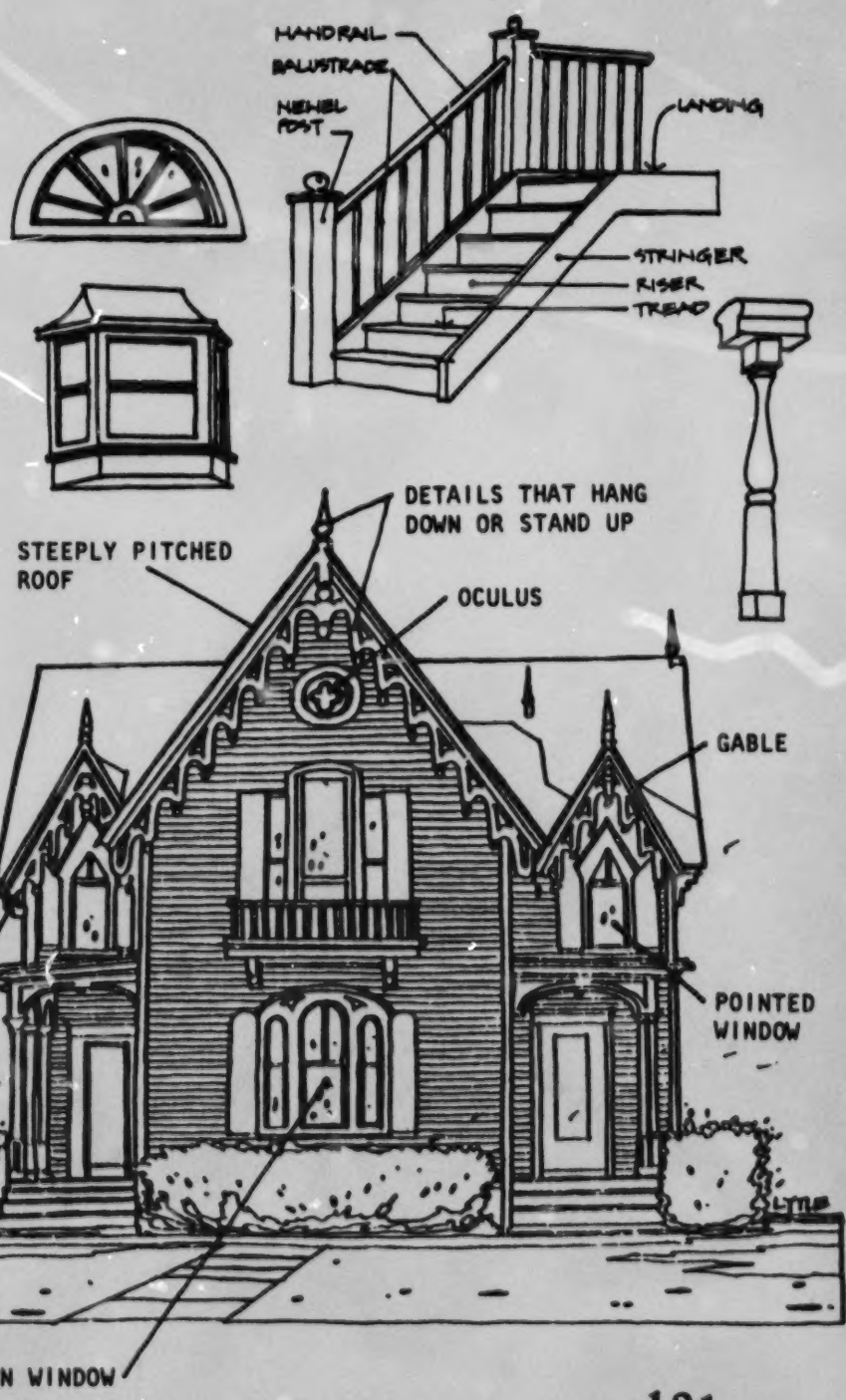
$12.95, plus $2.00 shipping

Olsen-Lytle Architects
315 S. State St.
Champaign, IL 61820

There's a lot of talk these days about bridging the gap between the professional and the layman. This book does more to achieve that than just about any other single thing I've encountered.

Professor in
environmental psychology





The urban landscape is given variety and interest by the changing scale of spaces. In a section on discovering the environment, students are helped to become more perceptive about the effect created by different spaces—such as the sense of enclosure, direction, or obstruction. Once aware of the environment, learning the vocabulary of architectural elements encourages accurate communication about one's environment.

The Sourcebook The American Institute of Architects

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Historic Preservation Education is a teaching guide for developing an aesthetic and historic appreciation of the built environment. The guide emphasizes the visual quality of architectural form and approaches historic preservation through developing aesthetic appreciation for form, scale, line, texture, and balance.

Major sections of this resource include aesthetic perception, environmental discovery, styles, city development, preservation, planning, and a history of Illinois architecture. An illustrated glossary and resource inventory are also included. Structured as a term course, any part can be adapted to an independent unit or to extend an existing curriculum. In each chapter there are specific sequences of activities defined for the teacher with Concepts, Main Ideas, and Facts. Regardless of a teacher's background, the explicit instructions and basic information on architecture and architectural history allow any teacher to feel comfortable learning with their students.

Adaptable to any age group, *Historic Preservation Education* has been used in elementary classrooms as well as with graduate students of design. The latter sections, although tailored to Illinois architecture, can serve as models for developing other local and state profiles.

Awarded *Progressive Architecture*'s 1981 Research Award, this teaching guide was developed by a team of architects who believe "that children can be taught to use their senses to find value in the permanent, the carefully crafted, the beautifully structured world of man and nature."

GRADE LEVEL

K–3	●
4–6	●
7–8	
9–12	
College–Adult	

SUBJECT AREA

Art	●
Language Arts	●
Math	●
Science	
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

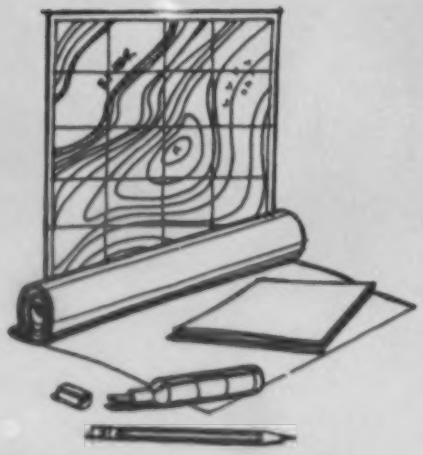
SETTING FOR USE

Classroom	●
Studio	●
Lab	
School Grounds	●
Field Trip	●

An Activity To Try

Planning a New Town

Materials:
Maps of the community
Paper
Markers
Pencils



To the Student:
Your class will be designing and building a model of an original new town. Here is your chance to become a city planner. Can you create a town in which you and your classmates and families would enjoy living?

Before you begin, the whole class must decide:

How many people will live in the new town?

What type of work will most people in the town do? (Farming, factories, offices, other?)

Decide which of the committees you want to join.

To the Teacher:
The actual planning of a New Town will take place in three phases. During each phase, the students will be grouped according to their interest to solve different tasks.

In Phase I, your students will be divided into three groups:

Location Committee. This group studies maps of the surrounding area and determines several possible sites for the new town.

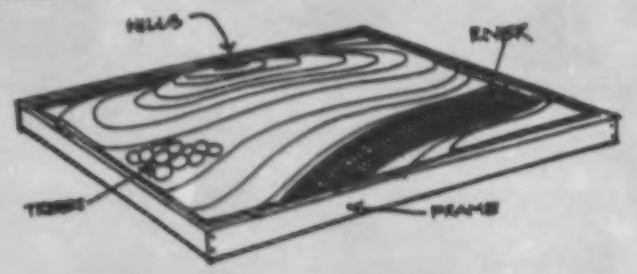
The Location Committee decides how much land will be needed; studies area maps to determine three possible sites that are free of existing housing; takes a field trip to each site to determine which is the best location for a town. Photographs or sketches should be made of each site. By the first Plan Board Meeting all tasks must be completed and a report of recommendations should be ready.

Advertising Committee. This group invents the town name and prepares suitable advertising to notify the school of the project.

The Advertising Committee decides on three possible names for the new town; designs a symbol which represents each name chosen; draws posters, brochures and other advertising to be placed in the room and in the school hallways. The advertisements will tell about the town and let the school know what your class is doing. By the first Plan Board Meeting, tasks 1 and 2 must be finished so that the class can decide on a name for the town. After the meeting, the committee designs and draws advertising with the new town's name and symbol.

Model Base Committee. This group decides the size of the model, determines the materials needed to build the town and obtains the materials.

The Model Base Committee is responsible for deciding how to build the model; decides the size and scale of the model; decides the materials to be used; obtains all necessary materials for the model; takes a field trip to a lumberyard or builder's supply to see what materials are available. By the first Plan Board Meeting, the size and scale of the model should be decided and presented to the class. The base of the model should be framed and ready to show to the class. Some materials should be ready to display.



The American Institute of Architects

Investigating Your Environment
Biological Sciences Curriculum Study

Regents of the University of Colorado

1975

Softbound, 140 pp. (teacher handbook), 176 pp. (student handbook)

$6.00 (teacher handbook), $4.60 (student handbook)

Addison-Wesley Publishing Company
2725 Sand Hill Rd.
Menlo Park, CA 94025

These materials have stood the test of time. They are probably some of the most helpful resources for teachers, particularly those not trained in environmental science or the social sciences.

Environmental education specialist

A look at values—how they develop, change and affect the quality of life for both the individual and society—is the starting point for this resource. Students learn testing, measuring and sampling techniques in order to develop the data base necessary for intelligent decision-making and active participation in environmental issues.

The Sourcebook The American Institute of Architects

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Investigating Your Environment is an instructional module that supports specific environmental explorations. The module framework is student-oriented, providing a collection of ideas, tools, and techniques to assist ninth through twelfth grade with environmental research projects.

Investigating Your Environment includes a student handbook, accompanied by a teacher handbook and a variety of environmental resource papers. The student handbook is arranged topically to provide specific information and guidance on problems such as population, water and air quality, noise, and land use. The teacher handbook provides practical information on implementing the six- to eight-week module, recommendations on procedures, equipment, and resources, as well as instructional strategies. The supplementary papers provide additional information on the study topics and extend the scope of the program to include food, solid waste, pesticides, and technology.

This resource requires a minimum of teacher involvement and may be used for individual student investigations or for class projects. The module requires six weeks of class time at a minimum, with five 45- to 60-minute classes per week. Nine or more weeks is recommended as the optimal time allotment.

Investigating Your Environment is an effective introduction to environmental studies and to research in general. It presents interesting, motivational issues and concerns, while providing very specific, tangible guidance. It makes asking questions exciting and the process of answering them intriguing.

GRADE LEVEL

K–3	●
4–6	●
7–8	●
9–12	●
College–Adult	●

SUBJECT AREA

Art	
Language Arts	
Math	
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

Classroom	●
Studio	
Lab	
School Grounds	
Field Trip	●

An Activity To Try

Measuring Population Density

Measurements of population densities are useful ways of comparing the space occupied by individual members of different populations. The unit of space chosen (square feet, acres, square miles) must be the same for all populations to be compared.

Population density is very easily calculated by dividing the number of individuals by the space that they occupy:

$$\text{density per space unit} = \frac{\text{number of individuals}}{\text{total space occupied}}$$

For example, suppose you determined that 1500 persons occupied a certain residential portion of your community having an area of 50 acres. The population density, expressed as persons per acre, would be

$$\frac{1500 \text{ individuals}}{50 \text{ acres}} = 30 \text{ persons per acre}$$

Density figures are readily converted from one unit of space to another. If you wanted to compare two density values, but one was in persons per acre and the other in persons per square mile, you would have to convert one of the values to make it comparable to the other. In this case, you could simply multiply the number of persons per acre by the number of acres in a square mile. Then both values would be expressed in terms of numbers per square mile. The following chart may be useful in your studies:

To convert from:	To:	Multiply by:
individuals per acre	individuals per square mile	640
individuals per square mile	individuals per acre	0.00156
individuals per acre	individuals per square yard	0.00021
individuals per square yard	individuals per acre	4,840
individuals per square yard	individuals per square foot	0.111
individuals per square foot	individuals per square yard	9
individuals per acre	individuals per hectare	2.47
individuals per hectare	individuals per acre	0.405
individuals per square mile	individuals per square kilometer	0.386
individuals per square kilometer	individuals per square mile	2.59
individuals per square yard	individuals per square meter	1.196
individuals per square meter	individuals per square yard	0.836

The American Institute of Architects
The Sourcebook

The Mystery Tour: Exploring the Designed Environment with Children

Richard C. Balaban and
Alison Igo St. Clair

Echo Hill Outdoor School (Maryland)
Center for Environmental Education
(Washington, DC)

1976

Softbound, 50 pp., illus.

$3.95

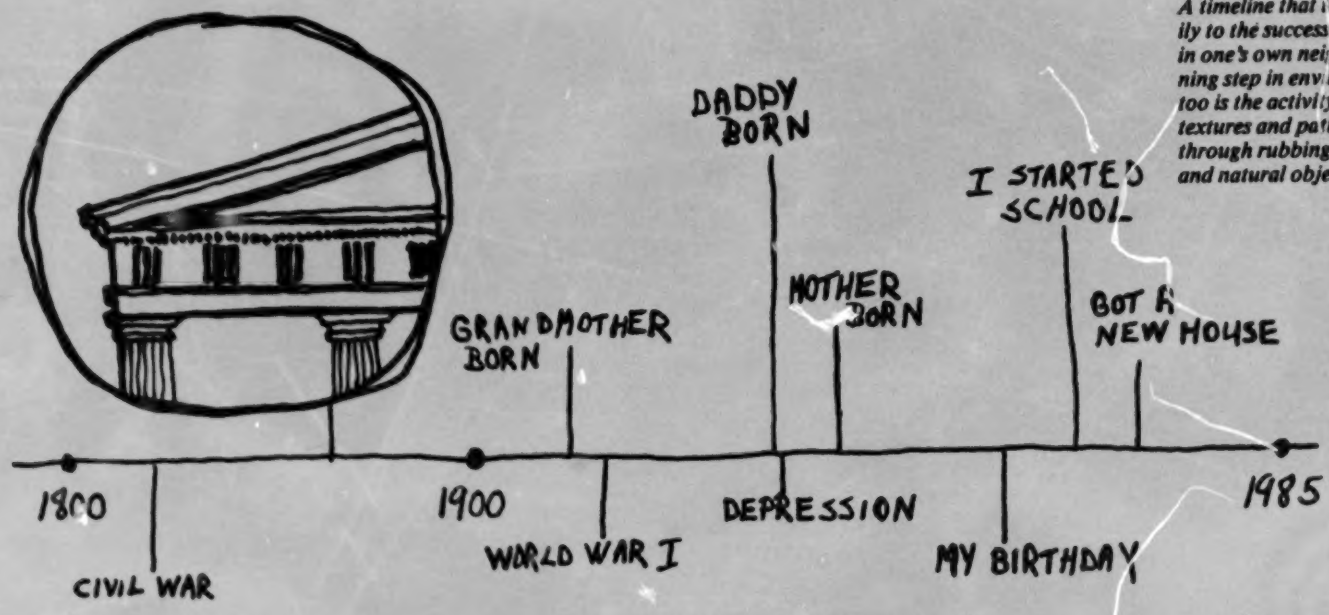
ISBN 0-89133-053-4

Preservation Press
1785 Massachusetts Ave., NW
Washington, DC 20036

The Mystery Tour *is great for exploring any downtown community. There are things to do right in the city. I happened on this at a time when I really needed some encouragement, and it really fit the bill.*

Sixth grade teacher

A timeline that ties events in one's family to the successive architectural styles in one's own neighborhood is a beginning step in environmental detection. So too is the activity which documents the textures and patterns of a neighborhood through rubbings of building materials and natural objects found there.



The Sourcebook The American Institute of Architects

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The Mystery Tour guides teachers and students toward an appreciation for the history of the human-designed environment and a greater "sense of place." This teacher booklet provides a conceptual and instructional framework for teaching historic preservation along with a well-organized sequence of activity/field trip explorations.

Three basic themes are woven through *The Mystery Tour*'s activities: historical sensitivity and perspective, environmental quality protection, and self-awareness and human relations. Each theme has several learning objectives to be achieved by students in the activity sequence. Neighborhood mapping, personal time lines, sensing investigations, and many other activities culminate in the "Wandering Exercise," an open-ended community exploration.

The Mystery Tour presents teachers with nineteen group activities that provide an introduction to learning and teaching about the local community. *The Mystery Tour* employs discovery and sensory awareness techniques along with a values clarification approach to environmental experiences. Originally designed for elementary school children, the tour can be adapted to any age group.

The Mystery Tour was developed at Echo Hill Outdoor School, where Richard C. Balaban began his week-long discovery sessions with fifth and sixth graders from the Baltimore, Washington, and Philadelphia areas. Alison St. Clair from the Center for Environmental Education wrote the complementary workbook of activities. This project was undertaken through a grant from the National Endowment for the Arts.

GRADE LEVEL	
K–3	
4–6	●
7–8	
9–12	
College–Adult	
SUBJECT AREA	
Art	
Language Arts	●
Math	●
Science	●
Social Studies	
RESOURCE TYPE	
Teacher Guide	●
Student Resource	
SETTING FOR USE	
Classroom	●
Studio	
Lab	●
School Grounds	●
Field Trip	●

An Activity To Try

Blind Walk

This activity helps students become aware of textures, spatial relationships and other design elements that often go unnoticed when their eyes are the main source of information about their surroundings.

Now we'll explore some of the ways to 'see' our surroundings without using our eyes. Divide into pairs again, with one person putting on a blindfold. For 10 minutes you will lead your partner around the area nearby. Try not to talk. Instead, help your partner explore with his ears, nose and hands. Some of the things you can do are these:

Put his hand to walls so he can feel the texture of the building. Go from the wall to the door, the porch or other parts of the structure so he can sense differences in the materials used and see what feels rough, smooth, cold and warm to his hands.

Lead him around the outside of the building past trees, flowers, the sidewalk and other nearby things so he can sense how the building fits into its surroundings.

You'll have other ideas of your own. Do all the things you can think of to help your partner get to know his area. Pick out things to 'show' him how it's unique. I'll tell you when 10 minutes are up; then you will switch and your partner will take over as guide.

When each student has had a turn and the blindfolds have been removed, let partners go together to try finding the place each was led to—without prompting from the other! Ask them to share with each other, or with the whole group, what clues helped identify their spots.

The Sourcebook The American Institute of Architects

Our Man-Made Environment: Book Seven

Alan Levy

Group for Environmental Education, Inc. (GEE!)

1971

Softbound, 80 pp., illus.

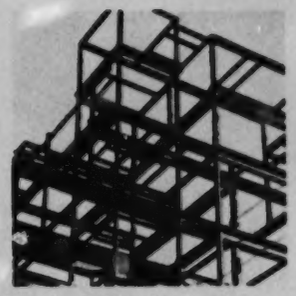
$5.95

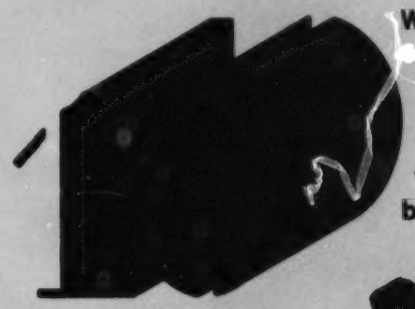
MIT Press
28 Carleton St.
Cambridge, MA 02147

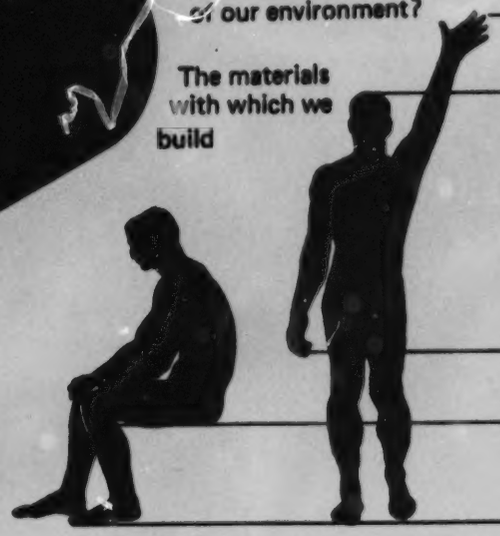
From my perspective, **Our Man-Made Environment** ***is one of the best mechanisms for getting students tangibly involved in basic concepts about the man-made environment. It is attractive, inviting, immediate, and it simply turns kids and teachers on.***

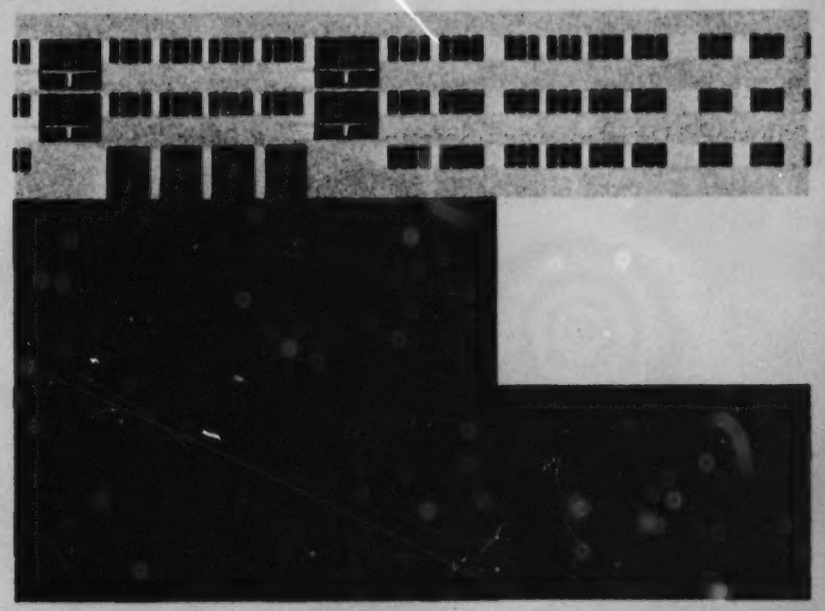
Environmental education specialist

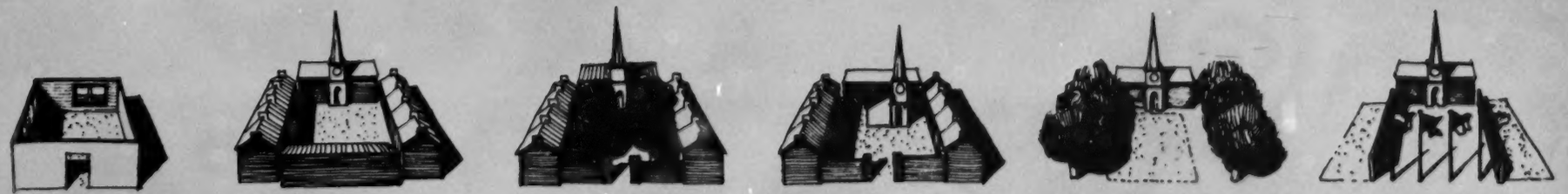
Learning to see both indoor and outdoor rooms is an important step in developing an understanding of the built environment. Outdoor rooms may have "walls" formed by other buildings, trees, or flagpoles. The actual form of every room depends on many factors: how it is to be used, what materials are to be used, and, of course, the size of man.











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Our Man-Made Environment: Book Seven is a student workbook unit on how people interact with their built environment: designing, building, and changing the man-made environment. *OMME Book Seven* engages junior high students in an exploration of the basic dimensions of the environment around them.

OMME Book Seven is organized around four basic questions: What is the man-made environment? Why do we build our environment? What determines the form of our environment? How do we change our man-made environment? Each chapter includes personable text and provocative graphics with questions, activities, and punch-out materials for model building.

OMME Book Seven may be used for self-instruction but there are myriad opportunities for class and small group interactions. The workbook is best understood sequentially and provides a well-structured unit of study. While teacher preparation is not a requirement, close familiarity with the unit and specific exercises is advised.

OMME Book Seven is one of several materials designed by the Group for Environmental Education (GEE!). The GEE! materials are the result of a collaboration among architects, graphic designers, teachers, and curriculum specialists.

GRADE LEVEL

K-3 ___
4-6 ___
7-8 ●
9-12 ___
College-Adult ___

SUBJECT AREA

Art ●
Language Arts ___
Math ___
Science ●
Social Studies ●

RESOURCE TYPE

Teacher Guide ___
Student Resource ●

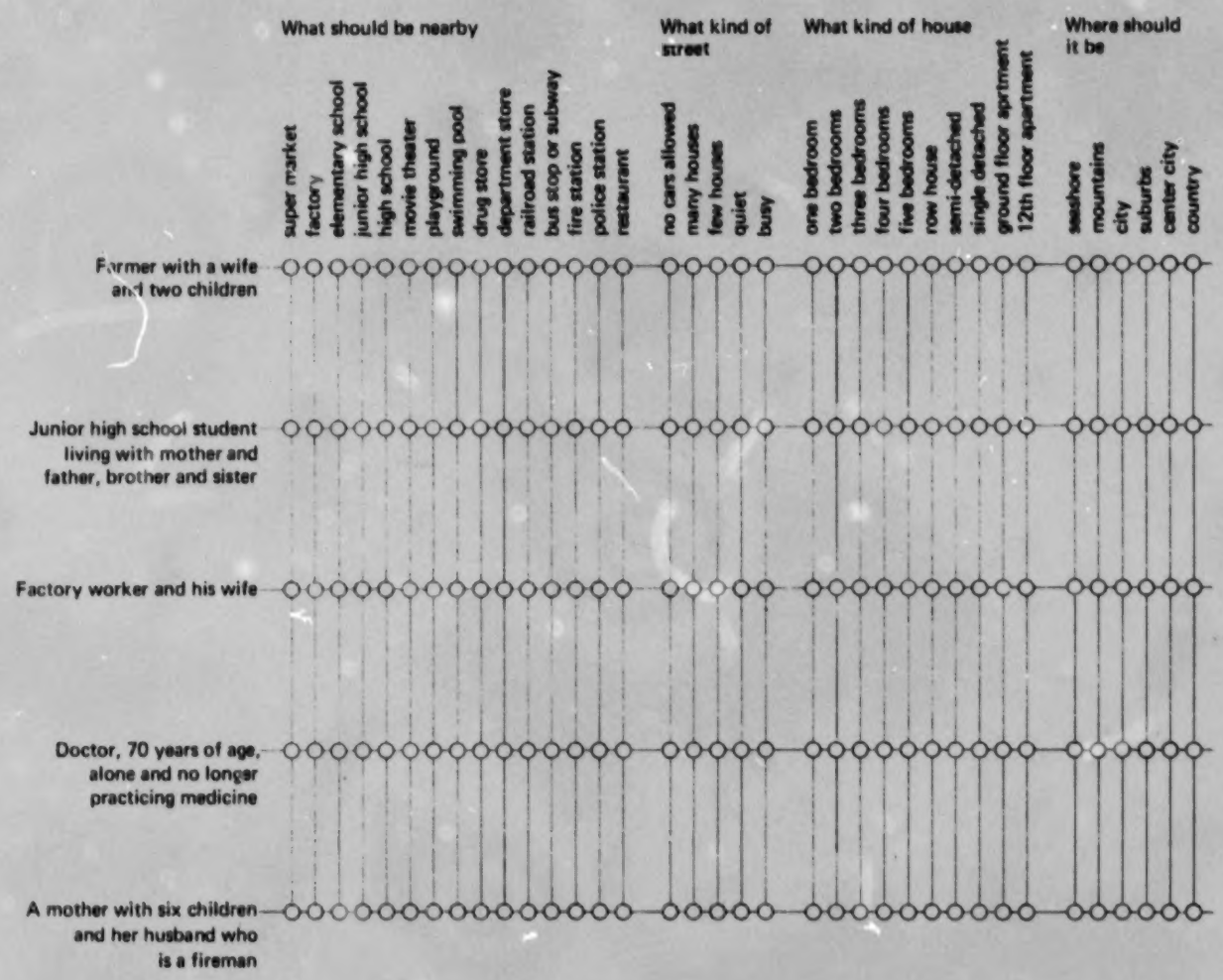
SETTING FOR USE

Classroom ●
Studio ●
Lab ___
School Grounds ___
Field Trip ●

An Activity To Try

Choosing a Place to Live

Imagine the needs of each of these persons and mark the circles that apply. Compare the differences that exist in the process of choosing a place to live.



The Smithsonian The American Institute of Architects

People in Places: Experiencing, Using, and Changing the Built Environment

Jay Farbstein and Min Kantrowitz

1978

Softbound, 182 pp., illus.

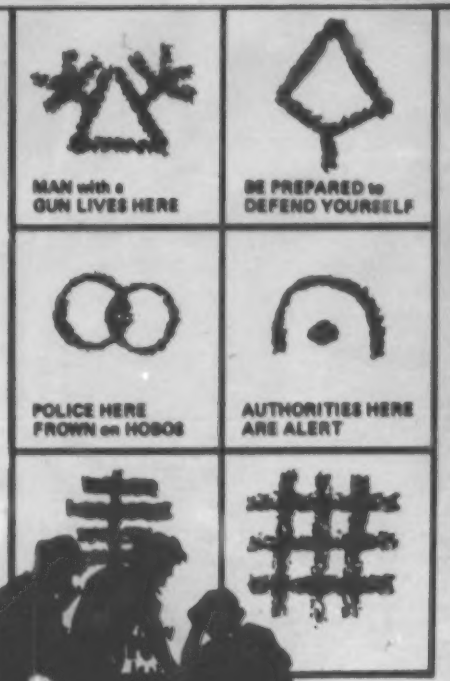
$4.95

ISBN 0-13-656777-0

Prentice-Hall, Inc.
Englewood Cliffs, NJ 07632

Definitely a teacher's cookbook for lively experiences in the environment. The menus, so to speak, are inspiring.
High school social studies teacher

What images do place-words conjure up? What feelings do we have about certain places? And what do places tell us? Sometimes the form, shape, or decoration of a place tells what happens there or what image the people living there want to convey. Activities for looking at, experiencing and discussing places engage the reader in analyzing environmental messages.



WORDS FOR PLACES

alcove
alley
apartment
arbor
armchair
asylum
attic

back door
back East
back porch
back room
back yard
balcony
ballpark
bar
barbed
barn
barrac
basem
bathro
bathtu
beach
beauty
bed
Beverl
bordel
border
boundary
bowling alley
bridge

cabin
cafe
camp
campfire
car
carnival
Casbah
castle
cathedral
cave
cell
cellar
cemetery
church
cliff
city
closet
cockpit
commune
community
corner
corridor
country
courtyard
cozy nook
creek

davenport
deck
den
desert
desk

elevator
emergency room
enclosure
entry
estate
exit

family room
farm
farmhouse
fire escape
fort
freeway
front door
frontier
front porch

garage
garden
garret
gate
gazebo
ghost town
glade
graveyard
greenhouse
gym

hallway
haunted house
hayloft
hearth
heaven
hell
highway
ole
ome-sweet-home
ospital
otel
ot seat
ouse
ouse of mirrors
ouse on the hill
ovel
ut

n bed
inn
inner sanctum
inside
institution
in the corner
island
isolation

jail
jogging track
jungle
junkyard

kitchen

laboratory
lavatory
lawn
living room
locker room
lounge
lover's lane
lower forty
lunch om

mall
mansi
marke
mauso um
meado
missio
monas ry
mortu
motel
Mount ve
mount n
movie
museum
my house
my room

palace
pantry
park
Park Avenue
parking lot
pasture
path
patio
pearly gates
pergola
pigsty
poorhouse

space
square
stadium
stairway

town
townhouse
tree house
trellis
tunnel
tunnel of love

upstairs
up the creek
up the river
uptown

The Environment and The American Institute of Architects

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People in Places is an illustrated idea and activity book for experiencing the environment. Forty-two projects are presented through a set of experiences or activities. Several ways of interpreting the results are then offered for consideration. Supplementary experiences, readings, and references to other projects in the book are also offered.

The projects are organized into six groups: "Experiencing Places," "Using Places," "Knowing Places," "How Places Work," "Politics of Places," and "Changing Places." The activities range from passive to active encounters with the environment, individual and group experiences, short and long, sensory, psycho-motor, and reflective. In short, this is a multi-entry guide for anyone interested in exploring the environment.

People in Places is intended to promote direct interaction with the environment in order to become more aware of how people affect and are affected by the environment, to learn what makes places good for people, and to discover how to create more of those places. The internal structure of the book is intentionally loose; the emphasis is on individual activities. Consequently, this book is particularly well-suited to teachers looking for numerous ideas but needing little guidance.

The authors bring their collective expertise in architecture, planning, and psychology to this fresh, experiential approach to environmental awareness.

GRADE LEVEL

K–3	●
4–6	●
7–8	●
9–12	●
College–Adult	●

SUBJECT AREA

Art	●
Language Arts	●
Math	
Science	
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	●

SETTING FOR USE

Classroom	●
Studio	●
Lab	
School Grounds	●
Field Trip	●

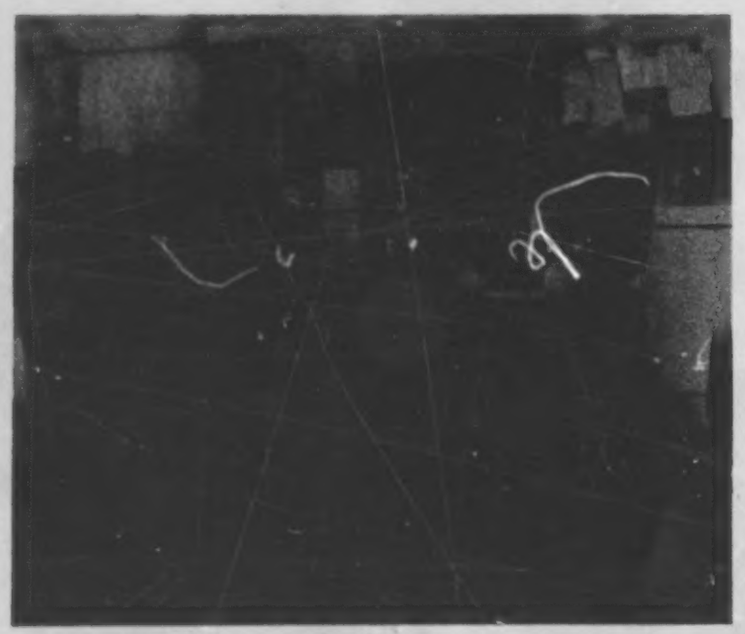
Activities To Try

Efficient Places

Some places are designed to be efficient. In attempting to achieve the highest level of productivity or profit, each detail is designed to minimize effort or waste. Since the design of the environment can have a major effect on performance, effort, and fatigue, efficiency is often an important design objective. Kitchens, factories, fast-food restaurants, and supermarket checkout stands are organized to be efficient.

Experiences

Visit a factory, fast-food restaurant, or supermarket and observe how emphasizing efficiency has affected the design. How do the features of the environment which stress efficiency influence the workers in this place? Is there evidence that comfort or enjoyment was sacrificed for the sake of efficiency? Does the place function more efficiently for one group of users than it does for others? Are there ways that the place could function even more efficiently? Should it be changed to accomplish this?



The Sourcebook The American Institute of Architects

A Place to Live

National Audubon Society

1970

Softbound, 52 pp. (teacher's manual), 64 pp. (student workbook), illus.

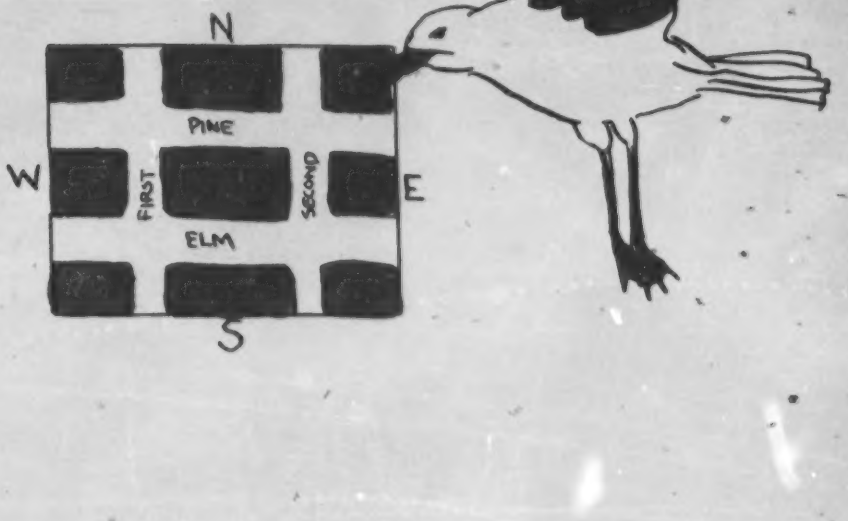
$3.00 (limited quantity)

Catalogue #73057

The National Audubon Society
c/o Lorraine Pichette
950 Third Ave.
New York, NY 10022

It's a good way to get teachers to use walking tours in their neighborhoods. It was a springboard for us to promote local walking tours in our community.
Director of a nature center

A child's relationship to the environment and the interdependencies between people and where they live constitute the focus of such activities as mapping one's neighborhood, comparing natural communities with urban ones and understanding urban systems.



The Sourcebook The American Institute of Architects

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A Place to Live is an urban ecology unit designed to teach environmental principles within the "living laboratories" of the city. *A Place to Live* starts where three-quarters of the nation's students are—in the city—and seeks to expand their understanding of nature and ecology through available urban settings.

A Place to Live includes a student workbook and a teacher's guide organized around three basic sections entitled, "You," "Where You Live," and "Cities Change the Environment." There are workbook exercises, classroom activities and ten urban walks. These integrated field trip experiences range from mapping the neighborhood to bird walks, to testing soil.

A Place to Live has been designed to encourage students to work on their own with minimal teacher supervision. With the exception of the urban walks, most of the workbook and associated activities can be handled independently by the students. The unit itself could be taught in sequence once a week over a semester, or concentrated for a one-month intensive unit. The teacher's manual is well developed, including sufficient background information, concepts, and pragmatic instructions to be used without teacher training.

A Place to Live, although first published over ten years ago by the Audubon Society, continues to be a workable introduction to nature for city kids. The focus is on the commonalities between people and animals and the impact of our human habitat on the environments of other species.

GRADE LEVEL	
K–3	
4–6	●
7–8	
9–12	
College–Adult	

SUBJECT AREA	
Art	
Language Arts	
Math	
Science	●
Social Studies	●

RESOURCE TYPE	
Teacher Guide	●
Student Resource	●

SETTING FOR USE	
Classroom	●
Studio	
Lab	
School Grounds	
Field Trip	●

An Activity To Try

A Look at a Lot

What was the weather like a short time ago?

What can you see that might smell good?

What might you hear that isn't a city sound?

How could you find out why one can is rusty and not the other?

Why is the worm on **top** of the soil?

How many different habitats and homes are shown?

What kind of weather would make the lot look better?

What changes would you expect to see in the plant under the table, if the table were removed?

Name as many man-made things as you can.

Why are most of the papers where they are?

Have people been in the lot? How can you tell?

What might happen if the tall plant on the right were removed?

The Sourcebook The American Institute of Architects

Problem Solving in the Man-made Environment

Michael McCoy, Dr. Meredith Davis, Robert Meganek, Douglas Snyder, William Whitely, and Patrick Whitney

Design Michigan Project

1975

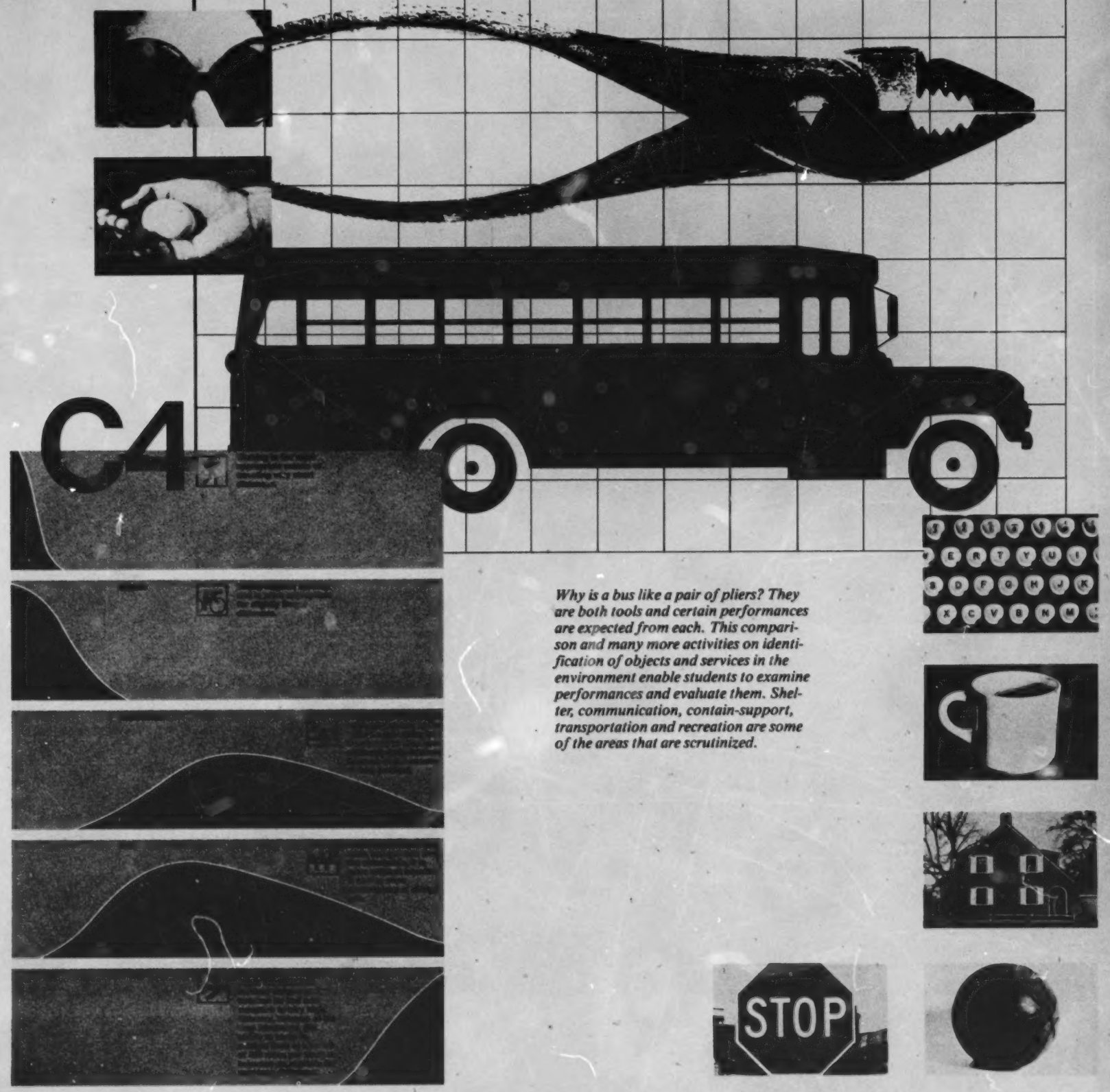
Looseleaf learning kit, posters

$25.00 (kit); $6.00 (posters)

Design Michigan Program
Cranbrook Academy of Art
Box 806
500 Lone Pine Road
Bloomfield Hills, MI 48103

This program offers a design science orientation to problem solving in the man-made environment. The material itself is elegant and in the best tradition of graphic design. Its systemic scope offers a comprehensive view of our man-made environment.

High school art teacher



Why is a bus like a pair of pliers? They are both tools and certain performances are expected from each. This comparison and many more activities on identification of objects and services in the environment enable students to examine performances and evaluate them. Shelter, communication, contain-support, transportation and recreation are some of the areas that are scrutinized.

The Sourcebook The American Institute of Architects

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Problem Solving in the Man-Made Environment is designed to engage students in environmental problem-solving. Identifying problems, gathering and analyzing data, and devising solutions are stressed as processes in which students will be involved in the future as citizens and community residents.

The program includes a teacher's guide and a set of five posters. The guide includes background information for teachers, lesson plans, charts, worksheet masters, glossary, and additional reference information. There are sixty-two projects contained in this middle-school course, and they are divided into three units: resources, school and community. They range from activities on friction, misfit, and efficiency to analysis of circulation paths; from tracing the history of one's school to analyzing the content of an advertisement. The posters are textbooks for walls, for they present general resource and project referral information and serve as graphic interpretations of the program concepts. They are intended for display for continuing referral throughout the program.

Although the projects should be carried out in sequence initially, the materials lend themselves to reorganization in ways that might be more suitable to individual teacher's needs and requirements. This resource can be used in other grades and, while originally designed for a social studies program, lends itself to interdisciplinary study.

Problem Solving in the Man-Made Environment was designed by the Cranbrook Environmental Education Project and is part of the Design Michigan program conducted by the Cranbrook Academy of Art.

GRADE LEVEL

K–3	
4–6	
7–8	●
9–12	●
College–Adult	●

SUBJECT AREA

Art	●
Language Arts	
Math	
Science	
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	●

SETTING FOR USE

Classroom	●
Studio	●
Lab	
School Grounds	
Field Trip	●

An Activity To Try

Activities and the Spaces in Which They Occur

Make a list of the activities in which you are involved during one school day, and write them in the spaces across the top of the worksheet. Then go down the worksheet and answer the questions by filling in the appropriate spaces under each activity.

	Arrive at school in the morning													
I do this alone														
I do this with one other person														
I do this with the entire class														
I do this with the entire school	●													
I do this with my teacher														
I am quiet when I do this														
I want the rest of the room quiet when I do this														
I am talking when I do this	●													
Others are talking when I do this	●													
We take turns talking when we do this														
I am sitting down when I do this														
I am standing up when I do this														
I am moving around a lot when I do this														
Others must sit with me when I do this														
Others move around with me when I do this	●													
It takes me less than 5 minutes to do this														
It takes me less than ½ hour to do this	●													
It takes me less than 1 hour to do this														
It takes me more than 1 hour to do this														
I need light to do this	●													
I need dark to do this														
I need to write while doing this														
I need a horizontal surface to do this														
I need electrical outlets to do this														
I need a water supply to do this														
I need a 4 ft. sq. area to do this														
I need more than a 4 ft. sq. area to do this														

The Sourcebook The American Institute of Architects

Save the Earth! An Ecology Handbook for Kids

Betty Miles

1974

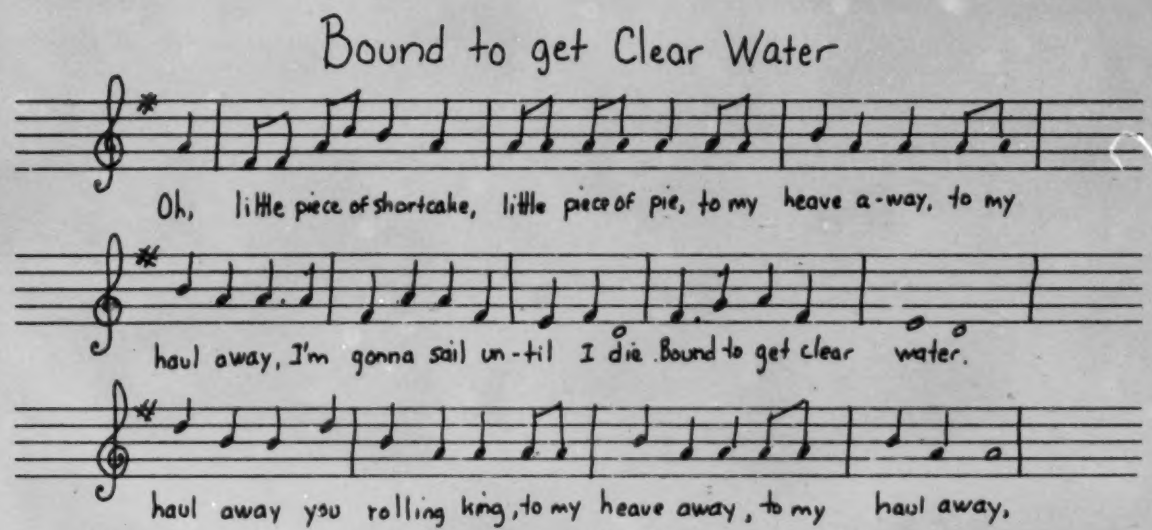
Softbound, 96 pp., illus.

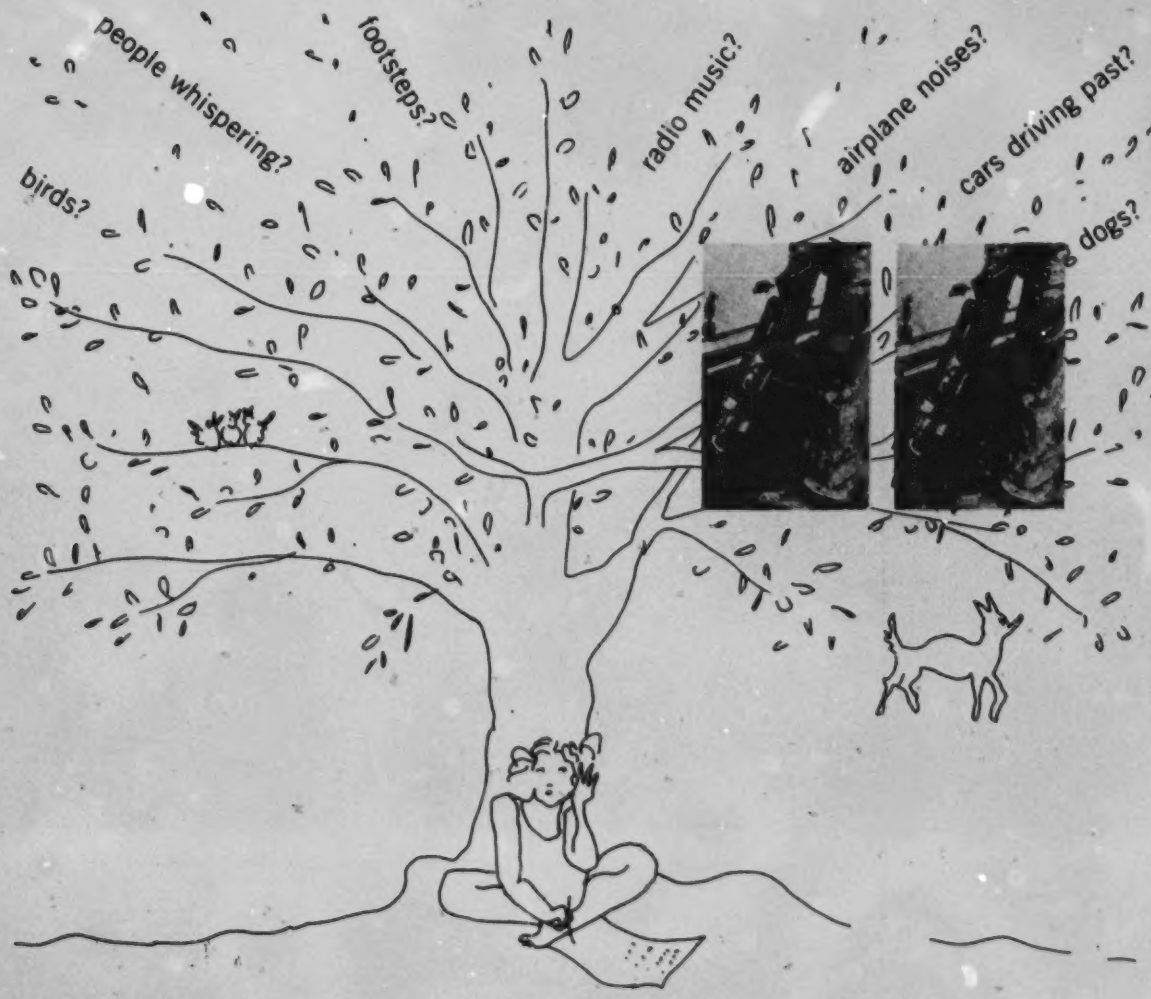
$2.50

ISBN 0-394-82658-2

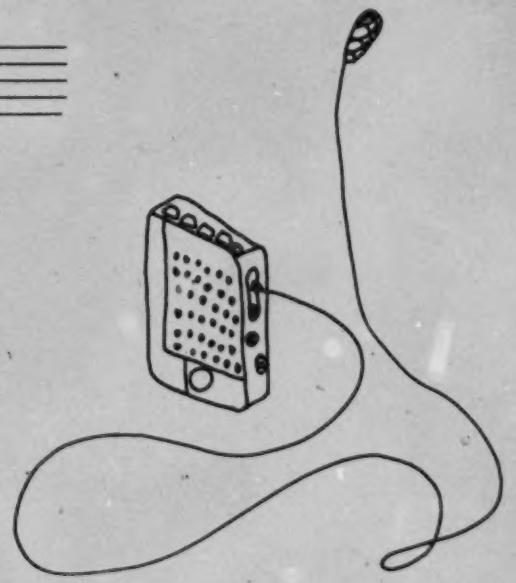
Alfred A. Knopf, Inc.
Random House, Inc.
400 Hahn Road
Westminster, MO 21157

Uses ordinary everyday things and experiences as the basis for lessons in conservation. It's a fine way to engage youngsters with their own environment and with the idea of environmental quality.
Elementary school teacher


Bound to get Clear Water
Oh, little piece of shortcake, little piece of pie, to my heave a-way, to my
haul away, I'm gonna sail un-til I die. Bound to get clear water.
haul away you rolling king, to my heave away, to my haul away.



"This is Diane Blackman. I'm interviewing Mrs. Martha Stewart, the very first person to throw trash into the new litter basket at the corner of Dewey and Sparkman Streets. Mrs. Stewart, what made you throw that milkshake container into the basket?"



Activities in this resource are aimed not only at increasing awareness of the various kinds of pollution problems confronting people in every kind of environment but also at encouraging participation in helping to solve these problems.

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Save the Earth! is a storybook and activity guide for young students on environmental problems and some close-to-home solutions. A combination of childlike line drawings, photographs, poems, stories, and activities make *Save the Earth!* a delightful learning resource.

The book is organized into four sections: "Land," "Air," "Water," and "How To Do It." Brief compositions in multiple formats present basic ideas and are followed by activity suggestions. The last section describes strategies such as letter writing, tape recording, newspaper stories, and organizing neighborhoods, to address any environmental problem.

Save the Earth! can be used as a sequential learning unit on ecology or as a student sourcebook. It can be read aloud to younger students. For fifth and sixth graders, *Save the Earth!* could inspire a multi-media class project to document environmental problems and their recommended solutions.

The strength of this resource lies in its ability to make ecological problems approachable through activities that can be conducted within the boundaries of younger students' lives, at home or at school. These simple activities enable early successes in affecting environmental quality. *Save the Earth!* teaches students that they make a difference.

The author, Betty Miles, teaches at Bank Street College of Education and has written several children's books on concept and value formation.

GRADE LEVEL

K–3	●
4–6	●
7–8	
9–12	
College–Adult	

SUBJECT AREA

Art	●
Language Arts	●
Math	●
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	
Student Resource	●

SETTING FOR USE

Classroom	●
Studio	
Lab	
School Grounds	
Field Trip	●

An Activity To Try

People Space

(a one-hour project)

This project is for four different classes in your school (or four different groups in your own class).

First, with your own group, choose a section of the playground that you think is big enough to play in comfortably. Mark it off with a chalk line, or with a rope.

Then ask another group to come and play with you in your space.

Now ask another group to come.

Ask another.

What happened?
Did you have to change the way you played?
Did you like having so many people in your space?
Did it get noisy?
What about people's tempers?

The Sourcebook The American Institute of Architects

Streets

Streets: A Program to Develop Awareness of the Street Environment

Serge Cvijanovic, and Galila Spero

The Architects Collaborative, Inc.

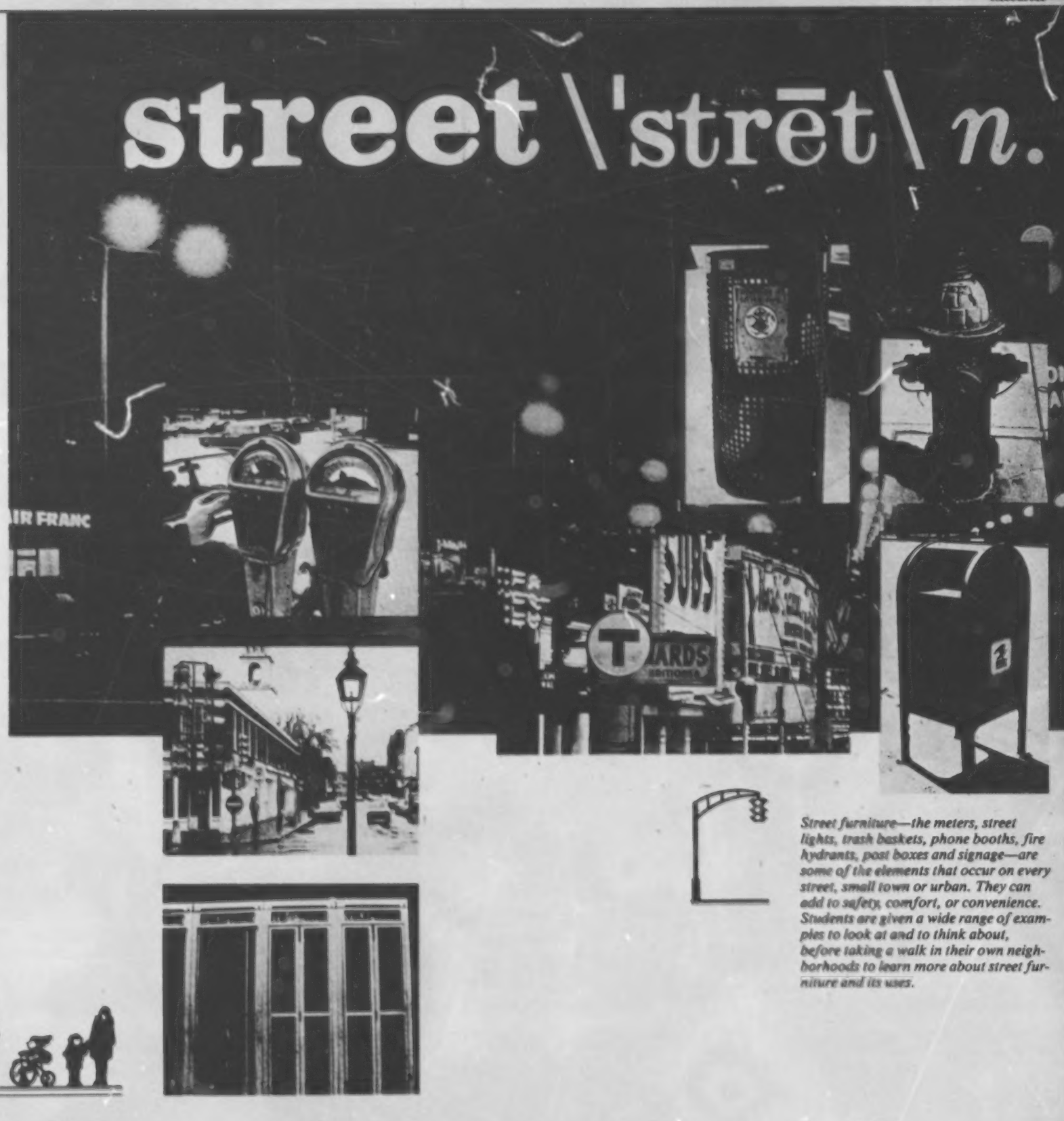
1976

Softbound, student workbooks, 90 pp.; teacher guide, 36 pp., reproducible worksheets

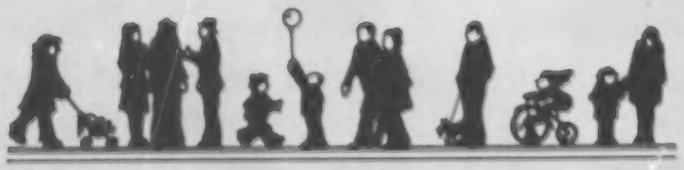
$37.00 for a kit (30 workbooks, 2 guides with worksheets)

Harwell Associates
PO Box 95
Convent Station, NJ 07961

I found Streets to be very useful in introducing my students to their own town. It's amazing what we don't see until we look for it. My class was really impressed with how much they discovered on the streets where they live.
Middle school social studies teacher



Street furniture—the meters, street lights, trash baskets, phone booths, fire hydrants, post boxes and signage—are some of the elements that occur on every street, small town or urban. They can add to safety, comfort, or convenience. Students are given a wide range of examples to look at and to think about, before taking a walk in their own neighborhoods to learn more about street furniture and its uses.



The Sourcebook The American Institute of Architects

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Streets gives elementary students new ways of looking at the streets where they live. An eight-part student workbook is accompanied by a teacher guide and reproducible work sheets. The first six parts of the program provide reading and observation exercises which focus on the different dimensions of streets as well as on their history. Sizes, shapes, textures, and features of streets and their companion buildings are illuminated through the use of this teaching kit. Photographs of environments in history and around the world are accompanied by a brief, informative text creating a springboard for two final sections which engage students in neighborhood investigations. Field trips and subsequent picture-making and model-building activities instill children with environmental awareness and some understanding of how the environment can be changed.

Streets will be particularly helpful for those teachers requiring fully structured learning activities. The field trip and modelling exercises are well organized. Detailed, dependable instructions are available for the students and their teachers.

Streets grew out of Serge Cvijanovic's involvement with the Urban Awareness Program of the Boston Society of Architects. In his work with the program he taught fourth graders about their neighborhoods and the city. Galila Spero, also an architect and a former teacher, documented these experiences so that others could share in the discovery of *Streets*.

GRADE LEVEL

K–3	
4–6	●
7–8	●
9–12	
College–Adult	

SUBJECT AREA

Art	●
Language Arts	
Math	
Science	
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

Classroom	●
Studio	●
Lab	
School Grounds	
Field Trip	●

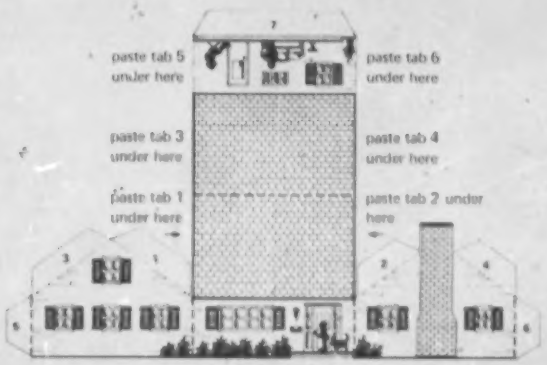
An Activity To Try

How To Make A Single-Family House

[Ed.'s note: This activity represents only one item from a section on making street models that includes models for high-rises and row houses, as well as suggestions for street furniture, trees, and so forth.]

1. Draw in windows, doors, and roofs.
2. Color the house. Look at the completed house for ideas.
3. Cut out the house including the tabs. Fold on all dotted lines.
4. Paste tab 1, then tabs 2, 3, 4, 5, 6, and 7.

1. Draw in windows, doors, and roofs.
2. Color the house. Look at the completed house for ideas.
3. Cut out the house including the tabs. Fold on all dotted lines.
4. Paste tab 1, then tabs 2, 3, 4, 5, 6, and 7.


paste tab 5 under here
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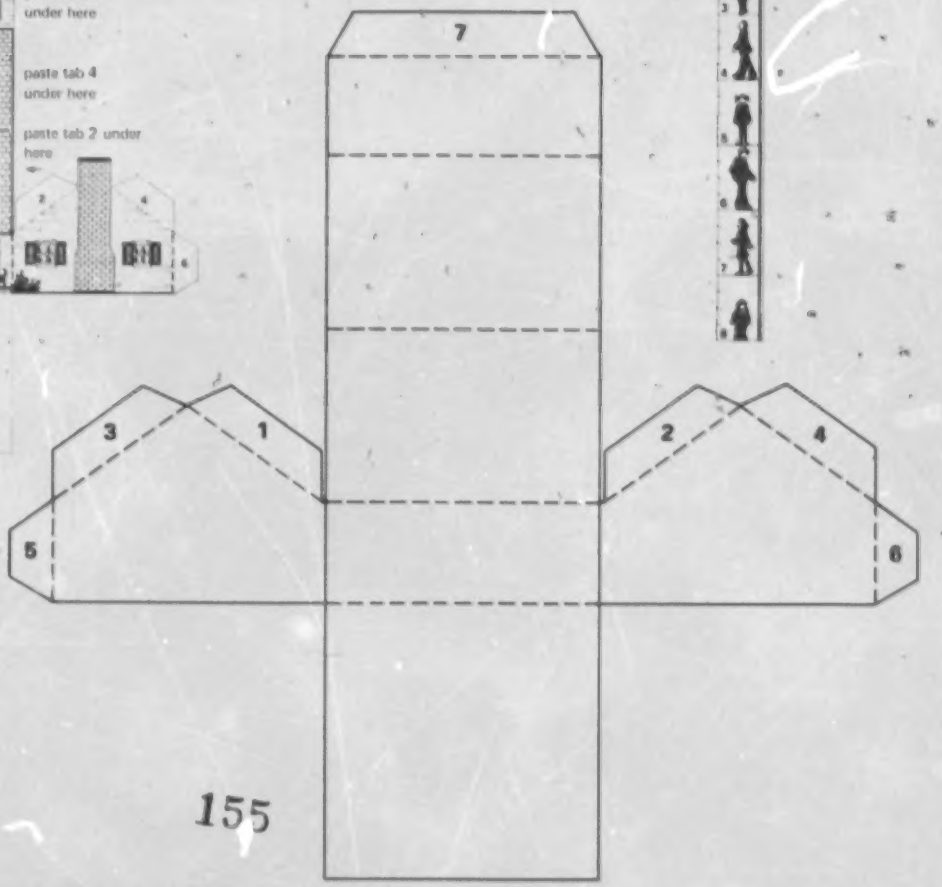
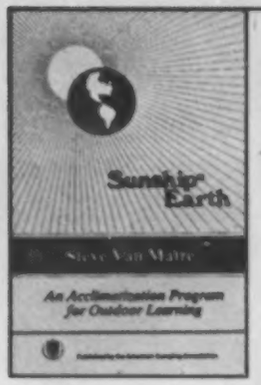
paste tab 3 under here
paste tab 4 under here
paste tab 1 under here
paste tab 2 under here
paste tab 7 on here



People Ruler B

The American Institute of Architects



Sunship Earth
An Acclimatization Program for Outdoor Learning

Steve Van Matre

Acclimatization Experiences Institute and American Camping Association

1979

Softbound (curriculum package, duplication masters, other materials available)

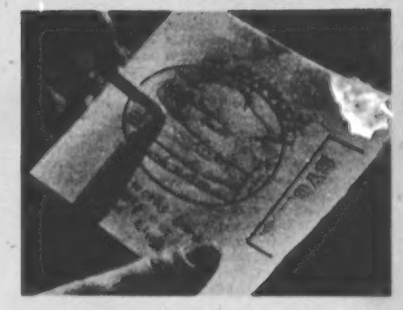
$9.95

ISBN 0-87603-007-x

Acclimatization Experiences Institute
PO Box 288
Warrenville, IL 60555

After fifteen years in environmental education, this has been the highlight of my whole career! The program puts magic into everyone's experiences. It builds ecological understanding and heightens feelings in a beautiful way that the teachers and students take right home with them.

Environmental education center director



"Concept Paths," the heart of this learning program, consist of five stations each of which offers a separate concept activity. Through scenarios such as "The Best Deal on Earth," which introduces the concept of air cycles, students become actively engaged in learning. Following each activity, students find examples of the concept in the natural world and enter them in their "passports." Another aspect of this program, "Immersing Experiences," is intended to promote total sensory involvement with the natural world in order to change perspectives and to get in touch with the land and its life.

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Sunship Earth extends the experiential outdoor education program developed by Steve Van Matre and his associates and documented in the earlier books, *Acclimatization* and *Acclimatizing*. To acclimate means to accustom oneself to a new environment and these books describe the process of breaking down the barriers between individuals and their environment so that they feel completely involved in and at one with the environment.

Sunship Earth is an affective, sensitizing, experiential approach to learning with and in the natural environment. The techniques and activities borrow directly from group processing, including role playing, "fishbowling," and microlabs, among others, in order to plunge the learners into the environment.

Sunship Earth is a multidimensional program that is supported by a variety of material resources: teaching guides, concept-building manuals, student logbooks, leader cue cards, duplication masters, and special curriculum packages. The *Sunship Earth* program is structured around a five-day resident camping program at special "Sunship Study Stations." The program encourages young people through firsthand experiences to relate to and understand the natural environment. Through *Sunship Earth* "students live what they learn and learn what they live."

Sunship Earth and the Acclimatizing program in general inspire teachers to turn outdoor classroom teaching into environmental experiencing. The premise is that only through total immersion in the environment can one appreciate it fully and become motivated to learn more

GRADE LEVEL

K–3	
4–6	
7–8	●
9–12	
College–Adult	

SUBJECT AREA

Art	●
Language Arts	●
Math	●
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	

SETTING FOR USE

Classroom	
Studio	
Lab	
School Grounds	●
Field Trip	●

An Activity To Try

[Ed.'s Note: Because of the nature of this resource, no activity accompanies this entry.]

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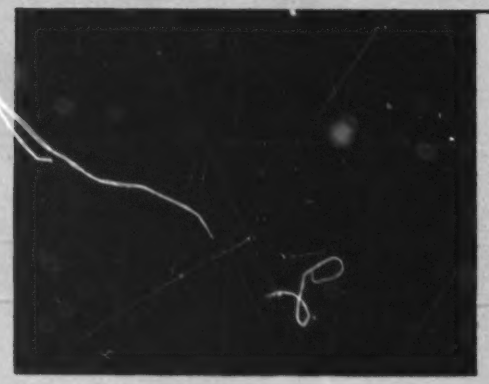


Symbiosis 3
Man and His Need for Shelter: Living in Harmony with Nature

John McRae

1978

Softbound spiral, 30 pp. teacher's guide, 34 pp. student workbook, illus.

Limited copies available

John McRae
College of Architecture
University of Florida
331 GPB
Gainesville, FL 32611

Moving from animal shelters to primitive huts to our own modern-day developments makes for fascinating study. McRae's work is well founded and imaginative.

History teacher

The Sourcebook · The American Institute of Architects

GLOSSARY of TERMS

DESIGN - the creative process of developing ideas into forms useful for people.

NATURAL SYSTEMS - the networks formed by the connections between all parts of the natural order. the relations between living organisms and their environment are very delicately balanced to achieve harmony.

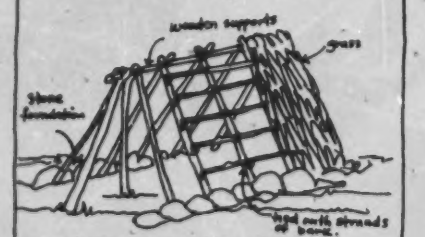
SPACE and FORM -

although space and form are interdependent, space is the designer's primary concern. From a space system springs a building's form. Space and its enclosing envelope, form, should be a balanced reaction to interior and exterior forces.

The design of primitive shelters offers children the basis for experimentation when they attempt to design their own spaces and structures. Students are encouraged to write about and discuss the way these spaces make them feel.

Lifestyle is related to all the other factors. It is perhaps the most important. People who followed the buffalo for their food had homes very different from farmers who lived in one place.

On the next several pages we will study the way primitive cultures build their homes.



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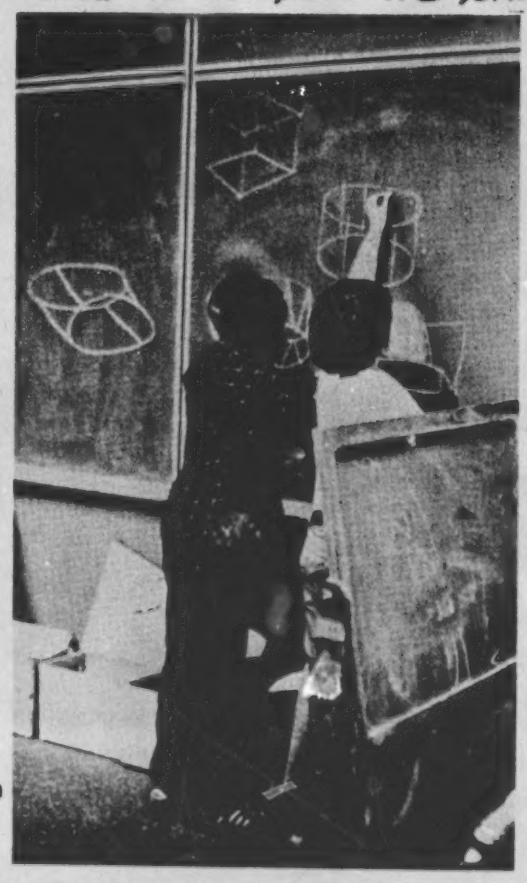
SPACE & STRUCTURE

Must be thought about together in design.

ADDITIONAL ACTIVITY *

write about, draw, or discuss a space in which you would like to read, climb, hide, and so on.

In this exercise the instructor drew an ellipse or square on the board and the students were asked to complete the form in three dimensions.



This is another exercise where the students could write a paragraph-here describing their feelings about the spaces they have created in the classroom.

Symbiosis 3 is a learning unit that studies people and human shelter by focusing on the primary living unit, the home. This program emphasizes the mutually beneficial relationship between nature and well-planned human habitats.

Symbiosis 3 is a sequential set of nine activities structured around a student workbook, filmstrips, illustrated stories and activity plans presented in the teacher's guide. The student workbook is organized into five major topics: animal habitats, architecture of primitive cultures, building in harmony with nature, space and structure, and individual design ideas. Each topic includes basic textual information and special exercises and is illustrated with engaging sketches and photographs.

The materials in *Symbiosis 3* are intended to evoke creative responses from students. Teachers do not need a detailed background in environmental studies or architecture to teach this unit. Nor is much teacher preparation needed for each activity. The unit can be taught over nine 40-minute class periods at the minimum. More time would be preferable, particularly for the final construction projects. *Symbiosis 3* is well suited to a multidisciplinary unit coordinating science, art, and social studies at the elementary school level.

Symbiosis 3, designed by the associate dean of the College of Architecture at the University of Florida, pays special attention to teaching needs and the requirements and constraints of classroom learning.

GRADE LEVEL

K–3	
4–6	●
7–8	
9–12	
College–Adult	

SUBJECT AREA

Art	●
Language Arts	
Math	
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	●

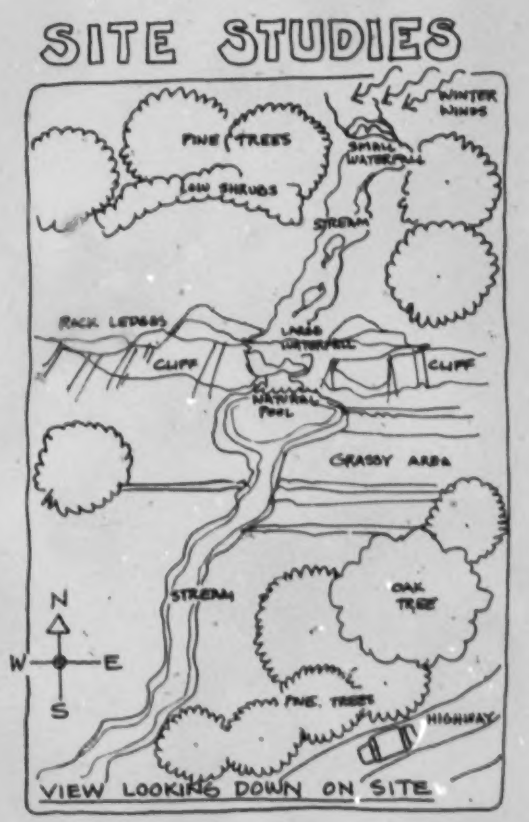
SETTING FOR USE

Classroom	●
Studio	
Lab	
School Grounds	
Field Trip	

An Activity To Try

Site Studies

1. Do you think the site is flat or does it have some steep slopes? Why?
2. Where does the sun rise on the site?
3. What kinds of noises would you hear on the site? What part of the site would be the noisiest?
4. Where would "borrower" animals probably live on the site?
5. In a heavy rain, what part of the site would probably flood first?
6. What is the direction of the winter winds?
7. Where do you feel is the best place to build on the site? Why?



The Sourcebook The American Institute of Architects

Understanding the Game of the Environment: An Illustrated Guide to Understanding Ecological Principles

David R. Houston

US Dept. of Agriculture Forest Service

1979

Softbound, 174 pp., color illus.

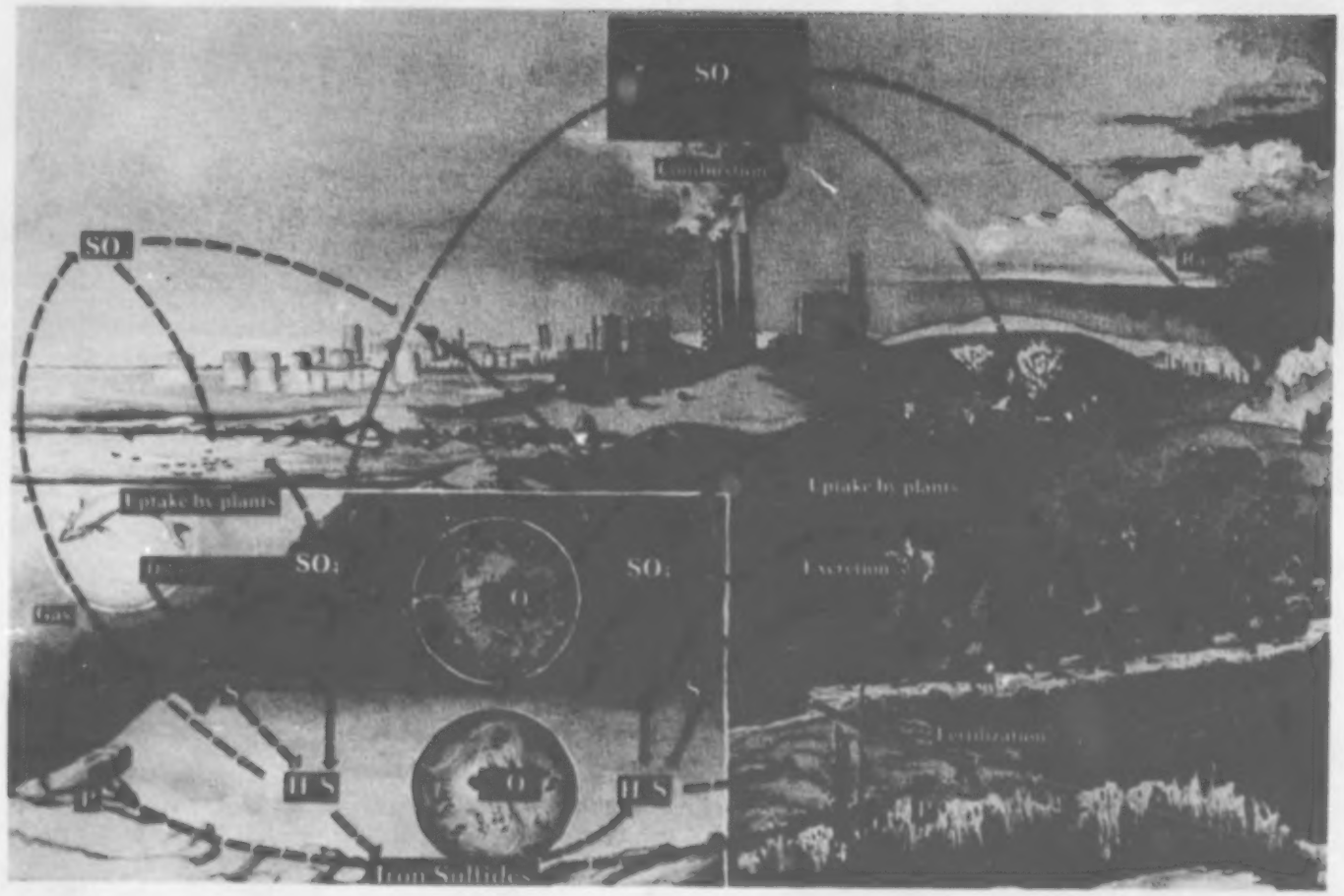
Available free in single copies; $6.50 each for multiple copies

USDA Forest Service
Office of Information,
Environmental Education
RM 3235 Box 2417
Washington, DC 20013

or

Superintendent of Documents
US Government Printing Office
Washington, DC 20402

request: Stock #001-001-00498-7



Typical of the informative illustrations in this book, this drawing describes the process by which what begins as an air pollutant often ends up in soil or water. The sulfur cycle is disrupted by injections of great quantities of sulfur dioxide into the atmosphere. Sulfur dioxide reacts with moisture to form sulfuric acid which can injure lung tissue, and injures or kills many important crop plants. Sulfur in the atmosphere produces acid precipitation, thus, emission in one location can adversely affect life processes many miles, even continents, away.

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Understanding the Game of the Environment introduces ecological principles in a game context where living organisms (Players) interact with one another and their ecosystems (the Playing Field). The Rules of the Game are those of energy flow and material cycling. Fouls and Penalties by man and nature alter the processes of natural succession.

This gaming approach provides a simple structure for learning about environmental systems. The presentation is straightforward, accompanied by complex watercolors. Activities are suggested throughout the text to focus group discussion or class projects.

A fine supplement to other classroom materials and field experiences, *Understanding the Game of the Environment* is particularly useful for beginning scientists or those without scientific interests, for it introduces scientific concepts and terms in a simple fashion within the setting of the Earth Game.

This resource presents the total Environmental Arena as a complex of interrelated ecosystems. People, their activities and settlements are treated within this ecological context. While human intervention is shown as manipulation of ecosystems often interfering with or breaking the Rules of the Game, the emphasis is on correcting past errors and developing a knowledgeable approach to Earthmanship.

This is the first time that a Federal resource management agency has published a basic text on ecology. This material was ten years in preparation and was tested for two years in high school classes before it finally went to press.

GRADE LEVEL

K–3	
4–6	
7–8	
9–12	●
College–Adult	●

SUBJECT AREA

Art	
Language Arts	
Math	
Science	●
Social Studies	

RESOURCE TYPE

Teacher Guide	
Student Resource	●

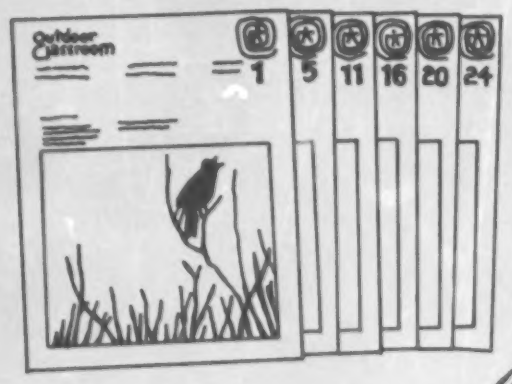
SETTING FOR USE

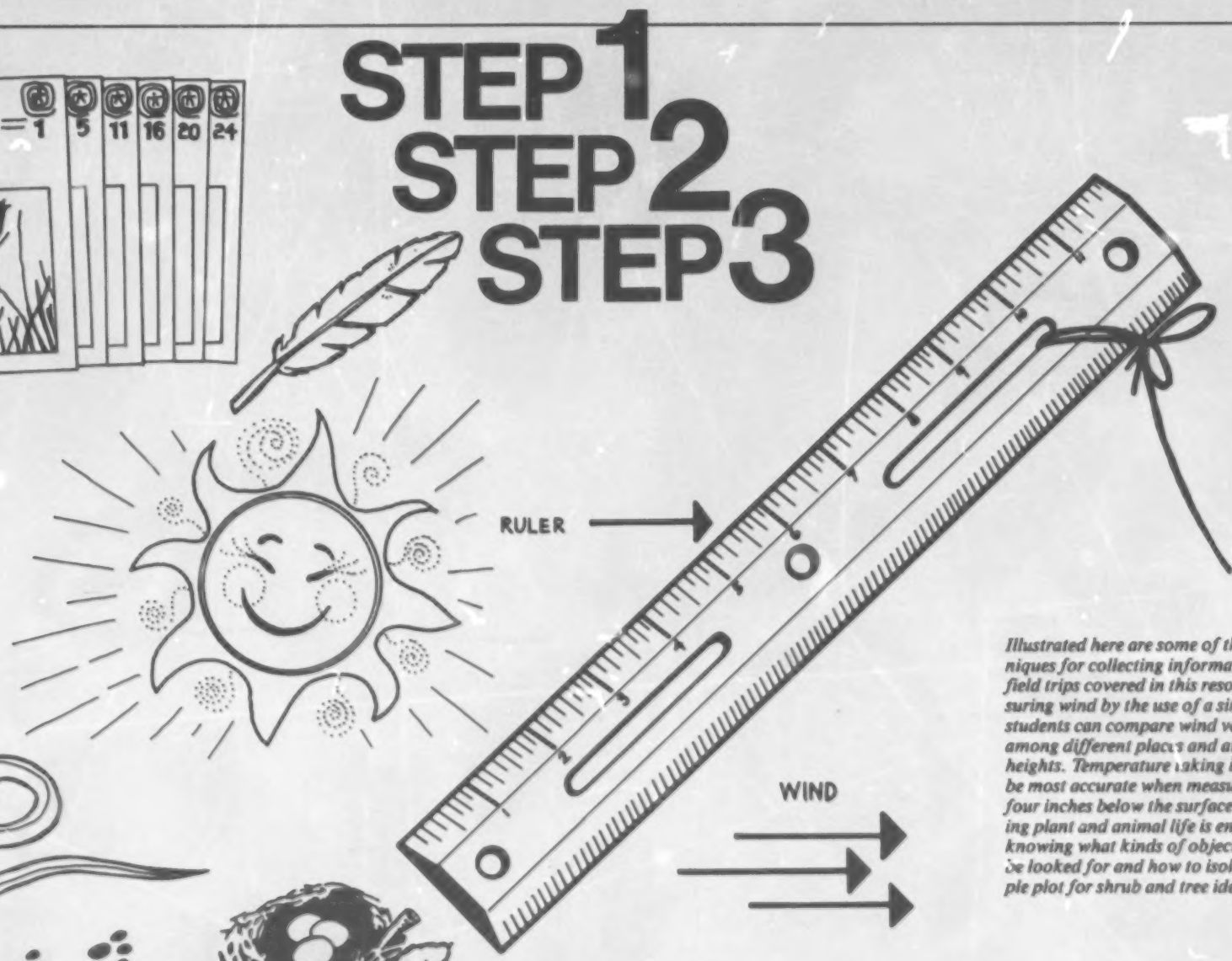
Classroom	●
Studio	
Lab	
School Grounds	
Field Trip	

An Activity To Try

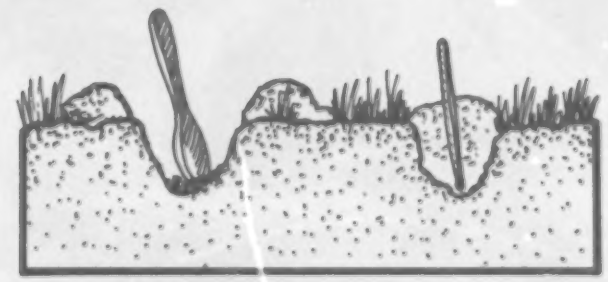
[Ed.'s Note: Because of the nature of this resource, no activity accompanies this entry.]

The American Institute of Architects The Sourcebook





Illustrated here are some of the techniques for collecting information on field trips covered in this resource. Measuring wind by the use of a simple device students can compare wind velocities among different places and at different heights. Temperature taking is shown to be most accurate when measured about four inches below the surface. Observing plant and animal life is enriched by knowing what kinds of objects should be looked for and how to isolate a sample plot for shrub and tree identification.



We Can Help
Environmental Education Teaching Resources

Minnesota Environmental Science Foundation
U.S. Dept. of Interior, U.S. Fish and Wildlife Service

1975

Softbound program guides; activity packet (teacher's guide, 46 pp.; 24 outdoor classroom guides, 6 pp. each)

Program guides, $5.00 set of four (plus $.50 postage)
Activity packet, $20.00 (plus $1.00 postage)

Jenny Publishing Company
57 Queen Ave. South
Minneapolis, MN 55405

There are several great ideas in We Can Help. *While I haven't used it as a total course or in its entirety, I pick and choose for various outdoor education activities. It's got a good selection and there's little teacher prep needed.*
Earth science teacher

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We Can Help is an environmental education teaching resource packet with multiple outdoor investigations designed to enhance the process of information gathering. The focus of the investigations is on natural history, nature study, conservation education, and ecology. *We Can Help* provides a sound field trip complement for any natural sciences program.

We Can Help materials include a teacher's guide and twenty-four individual activity guides which range from water flow and impoundment investigations to gophers and insects, from wildlife photography to fire ecology and fish hatcheries. Each investigation is developed at two levels for grades four through six and seven through twelve and takes up to one day to complete.

The investigations have a standard structure and can be used as models for other field trip topics. Small groups collect information on reproduced data sheets; the data is pooled and interpreted by the class in large group discussion. Each guide includes a synopsis, teaching goals, background information, materials, activity descriptions, data sheets, instructions, and post-investigation suggestions.

The companion teacher's guide has additional activity sequences, including "Environmental Decision Cards" for grades seven through twelve and "Wildlife Survival Games" for grades four through six. There is a particularly helpful section featuring a transect study designed to increase investigational skills.

It should be noted that teacher preparation for this material is often complex because standard lab equipment is frequently bypassed, replaced with sets of self-fabricated team tools.

GRADE LEVEL

K–3	●
4–6	●
7–8	●
9–12	●
College–Adult	

SUBJECT AREA

Art	
Language Arts	●
Math	●
Science	●
Social Studies	●

RESOURCE TYPE

Teacher Guide	●
Student Resource	●

SETTING FOR USE

Classroom	●
Studio	
Lab	
School Grounds	●
Field Trip	●

An Activity To Try

Redwinged Blackbird

In this activity students will be examining certain aspects of territorial behavior of redwinged blackbirds. They will map the territories of several males in a marsh area, observe territorial behavior, and theorize about possible relationships between territoriality and survival.

Part A
Map of territorial area for each team

1. Perch **2. Singing** **3. Flight** **4. Fighting**

Part B
Behavior Checklist

Type of Behavior	Record Frequency for Each Observation	Total
1. Perch: Shoulder patch display		
2. Singing: song scolding		
3. Flight: hovering diving		
4 Fighting: chasing encounters		

Part C
Discussion Questions

Do any territories overlap?

Are some territories considerably larger than others?

Does territory size seem to relate in any way to the physical features of the marsh?

Do you think your presence at the marsh had any effect on bird behavior?

How might the size of territories relate to total egg production in the marsh you studied?

Are there parts of the marsh which seem unoccupied?
If so, can you suggest why this is the case?

What kind of behavior was most frequently observed?
Can you offer some reasons for your observations

Considering the habitat preferred, how might draining the marsh affect territory size? What effect would this have on egg production?

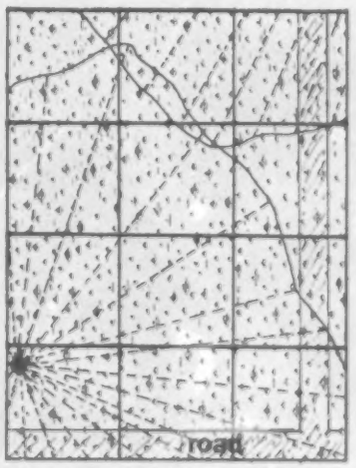


Figure Three—
Portion of a Composite Map

The Sourcebook The American Institute of Architects

Bibliography

The challenge in selecting materials for this Bibliography was not what should be included, but rather what could be omitted from the extensive array of appropriate material. There is no "complete" list; the choices cannot exhaust the possibilities. But, based on recommendations of persons actively involved in various aspects of environmental education, this admittedly arbitrary harvest illustrates the richness and breadth of commentary about the natural and human-designed environment—historic and contemporary—that nurtured the evolution of environmental education.

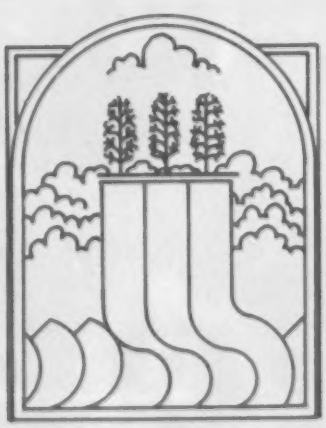
Suggestions for future inclusion can be made via the reply card found at the back of The Sourcebook, *or write directly to Alan Sandler, Public Education, The American Institute of Architects, 1735 New York Avenue, NW, Washington, DC 20006-5292.*

The American Building, 2. The Environmental Forces That Shaped It, 2nd rev. ed. James Marston Fitch. Houghton Mifflin, Boston, 1972.

A comprehensive text on environmental conditions and controls within a basic ecological framework for man, his environment, and shelter. Fitch argues for a more holistic approach to architecture, blending esthetic design considerations with performance standards responsive to human behavior, environmental forces, and technology. *American Building, Volume Two* spans history, continents, and academic fields in its consideration of spatial behavior and the variables of heat, air quality, light, sound, and structure.

"The ultimate task of architecture is to act in favor of man: to interpose itself between man and the natural environment in which he finds himself, in such a way as to remove the gross environmental load from his shoulders. The central function of architecture is thus to lighten the very stress of life. Its purpose is to maximize man's capacities by permitting him to focus his limited energies upon those tasks and activities which are the essence of the human experience."

The American Environment, Readings in the History of Conservation, ed. Roderick Nash. Addison-Wesley, Reading, MA, 1976.



A unique resource for reviewing the history of the conservation movement in the United States. Nash has compiled a useful, enlightening collection of primary source material. *The American Environment* traces the development of the concept of conservation from its beginnings in the early 1880s through the rise of parks, recreation and wildlife management, and on to the more recent tidings of current environmentalists. Readers will find essays by Thoreau, Olmsted, Roosevelt, Pinchot, Muir, and Leopold, along with Carson, Commoner, Hardin, Nader, and Brower among many others.

The City in History, Its Origin, Its Transformation and Its Prospects, Lewis Mumford. Harcourt, Brace, Jovanovich, New York, 1961.

One of the most original and comprehensive examinations of the origin and nature of cities. Mumford traces the development of cities across history from Egypt and Mesopotamia to Greece, Rome and medieval Europe. With a multidimensional perspective, Mumford explores both the physical elements of settlements as well as social patterns, political organization, and economic forces. Modern cities and future metropolises are analyzed, and an integrated planning system of regional grids is proposed as an alternative to present-day trends of urban discontinuity and social disintegration. Mumford offers the insight of an historian, urban planner, sociologist, and philosopher in this award-winning text.

"What is the city? How did it come into existence? What processes does it further: what functions does it perform: what purposes does it fulfill? No single definition will apply to all its manifestations and no single description will cover all its transformations, from the embryonic social nucleus to the complex forms of its maturity and the corporeal disintegration of its old age. The origins of the city are obscure, a large part of its past buried or effaced beyond recovery, and its further prospects are difficult to weigh. . . . If we would lay a new foundation for urban life, we must understand the historic nature of the city, and distinguish between its original functions, those that have emerged from it, and those that may still be called forth."

Close-Up, How to Read the American City, Grady Clay. Praeger, New York, 1973.

An upbeat, fast-paced guide to the form and evolution of American cities. Clay brings fresh insights to the study of urban elements and structures through his personalized, highly graphic treatment of city phenomena. He reports on the city experience and comes to such concepts as neighborhood and pathways through observations on turf behavior and "beat" patterns. Clay's journalistic insistence on crisp, creative words and visual imagery adds a special dimension of immediacy to this informative text.

"I came to regard cities and their urbanizing regions as consisting of time as well as materials, and forever changing. This is the real continuity. There is no universal and everlasting right way for cities to present themselves to us. Each reflects the ideas, traditions, and energies available to its citizens in past centuries, as well as at this moment. Each landscape and townscape is an intricately organized expression of causes and effects, of challenges and responses, of continuity and, therefore, of coherence. It all hangs together, makes sense, fits one way or another—for good or bad, loosely or tightly. It has sequences, successions, climaxes. It reveals patterns and relationships forming and reforming."

The Closing Circle, Nature, Man And Technology, Barry Commoner. Alfred A. Knopf, New York, 1971.

A powerful analysis of the nature and causes of the environmental crisis. Commoner, prominent scientist, educator, and environmental spokesman, provides a succinct statement on environmental systems and the laws of ecology. He then takes up specific case studies of air, water, land, and human genetic pollution, demonstrating the four basic laws of ecology: the interrelatedness of all parts; the indestructibility of matter; the wisdom of nature; and the inherent costs of all improvements ("there is no such thing as a free lunch"). Commoner presents a major indictment of post-World War II technology which has hastened the disruption of the cycles of life on this planet. He makes a strong case for the economics of an environmentally sound alternative.

"Survival—a property now so deeply associated with life—became possible because of a timely evolutionary development: the emergence of the first photosynthetic organisms. These new organisms used sunlight to convert carbon dioxide and inorganic materials to fresh organic matter. This crucial event reconverted the first life-form's waste, carbon dioxide, into its food, organic compounds. It closed the loop and transformed what was a fatally linear process into a circular, self-perpetuating one. Since then the perpetuation of life on the earth has been linked to an essentially perpetual source of energy—the sun."

Consider the Process of Living, William H. Eddy, Jr., Gonzalo S. Leon, Robert C. Miline. Conservation Foundation, Washington, D.C., 1972.

A powerful testimony to the marvels and limits of the earth, conveying its message through a bold text, striking photography, and classic quotations. *Consider the Process of Living* presents a global perspective on the earth's elemental environment—air, water, land, and energy. While not prophesying doom, the text does present a sober admonition against continued resource depletion and environmental pollution. The sweeping graphics evoke the magnificence of the environment and the quotations (ranging from Cicero and Sioux Indians to Rachel Carson and René Dubos) provide provocative reflections on man's role in the process of life. Produced by the Conservation Foundation in 1972, *Consider the Process of Living*'s international message remains vivid and challenging.

The American Institute of Architects
The Sourcebook

Conversations with Architects, John Wesley Cook. Praeger, New York, 1973.

Interviews with prominent contemporary architects: Johnson, Roche, Rudolph, Goldberg, Lapidus, Kahn, Moore, and Venturi. The editors conduct skillful, candid discussion which brings out both the uniqueness of each designer as well as their commonalities as artists and artisans. *Conversations* reveals the complex process of architectural design through firsthand experiences of the masters.

"These interviews turn up no new Le Corbusier with a grand if rather shivery scheme to reorder the world. What emerges in the end . . . is the normal American pluralism and pragmatism . . . manifested in what may be the last generation of architects to enjoy the extraordinary prestige as artists and thinkers with which Romanticism endowed them."

—from Foreword by Vincent Scully

Design with Nature, Ian McHarg. Doubleday, Garden City, NY, 1969.

A classic statement on the potential for design of human habitats within the natural order of environmental systems. *Design With Nature* provides an ecological approach to urban development as practiced and taught by McHarg. *Design With Nature* takes the reader through personal reflections, conceptual reconstructions, and specific case studies of environmental design for seascapes and swamps, watersheds and metropolitan complexes. McHarg draws on the history of "civilized" accomplishments around the world to demonstrate both the urgency and the opportunity for an alternative approach to accommodating human needs. For teachers interested in environmental design projects for their classes or for students considering careers in environmental design and planning, *Design With Nature* will be both provocative and inspiring.

Environment, Power and Society, Howard T. Odum. John Wiley and Sons, New York, 1971.

A systemic approach to the study of man and nature. Odum provides a "macroscopic view" of interrelated systems of energy, economics, environment, and society. Odum applies the principles of energy—as "pathways of power"—to his analysis of economics, politics, and religion to frame a new orientation toward human ecology and the future. After thoroughly defining energy and energy flow, he then demonstrates these power concepts within the biosphere, acquainting the reader with systemic terms, diagrams, and methodology. Odum extends this framework and his analytic tools to examine the role of power in human systems.

"Whereas man used to search among the parts to find mechanistic explanations, the macroscopic view is the reverse. Men, already having a clear view of the parts in their fantastically complex detail, must somehow get away, rise above, step back, group parts, simplify concepts, interpose frosted glass and thus somehow see the big patterns."

Public Law 91-516, Environmental Education Act, 91st Congress, H.R. 18260, October 30, 1970.

PL 91-516 authorized the establishment of environmental education programs "dealing with man's relationship with his natural and man-made surroundings and includes the relation of population, resource allocation and depletion, conservation, transportation, technology, and urban and rural planning to the total human environment." Signed four months after the first Earth Day in 1970, this Act stands as an expression of national commitment to education; a critical factor in the improvement of our American environment.

"The Congress of the United States finds that the deterioration of the quality of the Nation's environment and of its ecological balance poses a serious threat to the strength and vitality of the people of the Nation and is in part due to poor understanding of the Nation's environment and of the need for ecological balance; that presently there do not exist adequate resources for educating and informing citizens in these areas and that concerted efforts in educating citizens about environmental quality and ecological balance are therefore necessary."

The American Institute of Architects
The Sourcebook

Existence, Space and Architecture. Christian Norberg-Schultz. Praeger, New York, 1971.

An examination of the concept of existential and architectural space. Norberg-Schultz views space as a basic dimension of human existence too often overlooked; and architectural space as concrete extension of human special apperception. In *Existence, Space and Architecture,* Norberg-Schultz analyzes elements and levels of space as it is experienced by people and applies this conceptual schema to the built environment.

"In general we may say that man, through his works, expresses the capacity of the landscape. As his life takes place in interaction with landscape, this is natural. His settlements, therefore, usually articulate places given by nature, such as the fertile promontory surrounded by unsurmountable mountains, or the protecting harbour on the windbeaten coast."

Experiences in Visual Thinking. Robert H. McKim. Brooks-Cole, Monterey, CA, 1980.

A te: on processes of thinking with special emphasis on visual imagery. This Stanford University text evolved over many years in and out of the classroom. Productive thinking is analyzed by several conditions: the challenge to think, quality of information, ability to think on a variety of levels, proficiency in mental operations, and ability to use various vehicles or modes of thought.

"The two most successful approaches to the education of thinking are the "discovery method" and the "strategy method." In the discovery method, students are not required to memorize concepts but are stimulated to discover concepts for themselves, they learn to think independently because they are challenged to do so. In the strategy method, students are not only challenged to think but also taught how to apply a number of thinking strategies. They are taught, for example, that the thinker who fluently produces a number of possible solutions to a problem is usually more successful than the thinker who settled for one solution."

The Sourcebook The American Institute of Architects

Experiencing Architecture, Steen Eiler Rasmussen, MIT Press, Cambridge, MA, 1962.

A now classic exploration of architecture as a functional art and profession. Rasmussen succeeds through lucid prose and abundant illustrations in introducing the multidimensional nature of architecture to the layman. Solids and cavities, scale and proportion, light and texture are among the many elements of the designed environment he examines. Rasmussen draws on historical examples, everyday objects, and his own experiences to convey the process of designing architectural environments.

"Understanding architecture, therefore, is not the same as being able to determine the style of a building by certain external features. It is not enough to see architecture; you must experience it. You must observe how it was designed for a special purpose and how it was attuned to the entire concept and rhythm of a specific era. You must dwell in the rooms, feel how they close about you, observe how you are naturally led from one to the other. You must be aware of the textural effects, discover why just those colors were used, how the choice depended on the orientation of the rooms in relation to windows and the sun. . . ."

Foxfire Books, ed. Eliot Wigginton. Anchor Press, Garden City, NY, 1980.

Now in its fifteenth year, the high school magazine, *Foxfire* records the heritage of its southern Appalachian community. Guided by teacher/editor Eliot Wigginton, ninth and tenth graders of Rabun Gap-Nacoochee School continue to research and document local history, crafts, traditions, and people. There have been six volumes of selected stories and articles since the first *Foxfire Book* published in 1972. *Foxfire 6*, like its predecessors, contains a combination of stories, reflections, interviews, and craft instructions; including a profile of Jake Waldroop, a ninety-year-old hunting guide and story teller; articles on gourd banjoes and songbows, wooden locks and shoemaking; and remembrances of American Chestnut trees. The *Foxfire* experience provides a unique model for integrating school and community, past and present, and natural settings with designed environments throughout history.

The Stamford The American Institute of Architects

The Hidden Dimension, Edward T. Hall. Doubleday, Garden City, NY, 1966.

Explores spatial behavior and perception in public and private, at home and around the world. *The Hidden Dimension* provides an overview of "proxemics," the study of man's use of space, based on research from a broad range of fields within the social sciences. Professor Hall weaves the related findings together into a fascinating exploration of behavior in space with special attention to the culturally determined spatial envelopes that delimit intimate, personal, social, and public distances. Classic experiments such as Calhoun's crowding experiments with Norwegian rats, investigations into unusual natural phenomenon exemplified by the mystery behind the die-off of Sika deer on James Island, and cross-cultural studies typified by a discussion of the Japanese concept of "ma," offer insight into non-verbal communication, the language of space, and cultural statements in art and architecture.

How Buildings Work, The Natural Order of Architecture, Edward Allen. Oxford University Press, New York, 1980.

A complete, illustrated guide on how buildings work and the underlying principles to their functioning. Allen of MIT provides a much needed encyclopedia of clear, concise explanations of building functions. *How Buildings Work* can be appreciated by the layperson, young students as well as professional architects. Each chapter of *How Buildings Work* demonstrates a specific building function, e.g., water supply, thermal comfort, air movement, and structural support. Across historical styles, building materials, and climates and terrain, Allen discovers the natural order of architecture in its function.

"A house of snow in the Arctic obeys the same physical laws as one of bamboo in the tropics, and a steel-framed skyscraper is not so far removed from a tree house as we would sometimes believe."

The Sourcebook The American Institute of Architects

The Image of the City, Kevin Lynch, MIT Press, Cambridge, MA, 1960.

A primary reference for students of urban design. Lynch, professor of urban design at Massachusetts Institute of Technology, presents his research on three American cities and the evolution of a system of city image and form. As a resource for secondary school students and teachers, *The Image of the City* annotates the visual form and organization of cities as seen through the eyes of city dwellers, researchers and urban designers. The vocabulary of paths, edges, nodes, districts, and landmarks can be quickly assimilated and easily applied to mapping and design exercises.

Landscapes, Selected Writings of J.B. Jackson, ed. Ervin H. Zube. University of Massachusetts Press, Amherst, MA, 1970.

Essays on the landscape inhabited and altered by man. J.B. Jackson, long-time editor and publisher of *Landscape Magazine,* writes about the American landscape, its physical dimensions as well as the social and cultural forces it reflects. Landscapes includes essays and speeches prepared during 1965 and 1966, carefully assembled and placed by the editor of this collection. Topics span domestic architecture, street scenes, and suburban sprawl. Never stopping at criticism, Jackson turns his comments to positive alternatives or optimistic prospects. With very few words, Jackson can capture both the richness of a particular setting and its potent implications.

"With some justice we complain of the shoddy construction and poor design of our highway establishments, the total lack of any comprehensive scheme or of any harmony between the several parts of a strip development. But the wonder is that they are as good as they frequently are. Is there any architectural school in the country which acknowledges the existence and the importance of a popular other-directed architecture meant for pleasure and popular mass entertainment? We have forgotten, it seems, that architecture can sometimes smile and be lighthearted and that leisure, no less than study or work, calls for an appropriate setting."

The American Institute of Architects
The Foundation

The Lives of a Cell, Notes of a Biology Watcher, Lewis Thomas. Viking Press, New York, 1974.

Graceful, provocative explorations of the mysteries of life which interrelate the smallest cellular construction with the behemoth. Thomas, a prominent physician and medical researcher, unfolds complex intricacies and simple constants of natural existence through this collection of absorbing essays. Initially published separately in the *New England Journal of Medicine,* these essays (and a later collection, *Medusa and the Snail*) are eloquent models of observation and interpretation. Moving easily from microcosm to macrocosm and back again, Thomas poses both subtle and grand questions, making the process of inquiry as illuminating as the answers.

"We start our lives with templates, and attach to them, as we go along, various things that fit. There are neural centers for generating, spontaneously, numberless hypotheses about the facts of life. We store up information the way cells store energy. When we are lucky enough to find a direct match between a receptor and a fact, there is a deep explosion in the mind; the idea suddenly enlarges, rounds up, bursts with new energy, and begins to replicate. At times, there are chains of reverberating explosions, shaking everything: the imagination, as we say, is staggered."

Music of the Spheres, The Material Universe from Atom to Quasar, Simply Explained, rev. ed. Guy Murchie. Dover, New York, 1967.

An intriguing adventure through the material universe from galaxies to atoms. Murchie, philosopher, scientist, and poet, guides his readers of all ages and persuasions through both macrocosm and microcosm, explaining in lay terms significant scientific findings and quests. The first volume extends from the origin of the Earth's contours to new discoveries beyond the solar system. The second volume focuses on the elemental dimension of our universe, ranging from atoms and sine waves to antimatter and the fourth dimension. *Music of the Spheres* makes more accessible the mysteries of the world and beyond.

"The earth has been rolling blindly through the void for some five billion years, slowly developing an organ of consciousness, and it is just now arriving at the stage where it is capable of seeing and understanding itself. Its stones and rivers have begun to speak and its winds at last have found their tongues in the mind of man. The very layers of the soil, the grain of glaciers, the rings of trees, even the sea bottoms have become living pages of our world's diary that she may read back to herself for the first time."

The Sourcebook The American Institute of Architects

New Directions in American Architecture, Robert A.M. Stern. George Braziller, New York, 1977.

A presentation of selected designs from prominent contemporary post-modernist architects—Kahn, Roche, Rudolph, Johnson, Venturi, Giurgola, and Moore. Their contributions are placed in the context of the preceding generations of renowned architects and the requirements of our current times. Examples of each architect's designs and writings are featured. The latter half of the book addresses architecture and the city, emphasizing specific contributions of planners and architects to urban design and renewal.

"Post-modernism recognizes that buildings are designed to mean something, that they are not hermetically sealed objects. Post-modernism accents diversity; it prefers hybrids to pure forms; it encourages multiple and simultaneous readings in its effort to heighten expressive content. Borrowing from forms and strategies of both modernism and the architecture that preceded it, post-modernism declares the past-ness of both. The layering of space characteristic of much post-modernist architecture finds its complement in the overlay of cultural and art-historical references in the elevations. For the post-modernist, 'more is more.'"

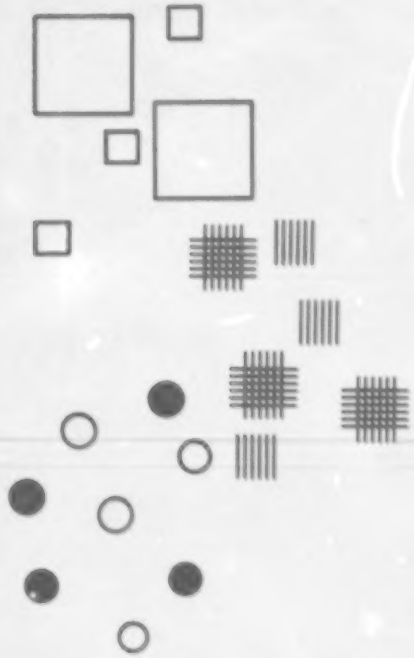
Operating Manual to Spaceship Earth, Buckminster Fuller. Southern Illinois University Press, Carbondale, IL, 1968.

The best introduction to the world of Buckminster Fuller, the designer of the geodesic dome and the Dymaxion car among other environmental technologies and systems. In *Operating Manual,* Fuller examines the evolution of human intelligence and promotes a survival plan that requires the full use of our intellectual and technological capacities. Fuller places the highest confidence in the power of information and technology, placing the burden of the state of our twenty-first century in the hands of the planners and architects, engineers and educators of today.

"I would say that designed into this Spaceship Earth's total wealth was a big safety factor which allowed man to be very ignorant for a long time until he had amassed enough experiences from which to extract progressively the system of generalized principles governing the increases of energy-managing advantages over environment. The designed omission of the instruction book on how to operate and maintain Spaceship Earth and its complex life-supporting and regenerating systems has forced man to discover retrospectively just what his most important forward capabilities are. His intellect had to discover itself. . . ."

The Sourcebook The American Institute of Architects

A Primer of Visual Literacy, Donis A. Dondis. MIT Press, Cambridge, MA, 1973.



A text on the nature and techniques of visual communication for design students, art teachers and anyone interested in the significance of visual media. *A Primer of Visual Literacy* explores the creation and interpretation of visual imagery. Symbolic, representational and abstract messages are revealed through a visual "syntax" that includes basic visual elements, such as the dot, line, shape, direction, tone, color, texture, dimension, scale, and movement. *The Primer of Visual Literacy* offers instructive insights into visual communication, techniques, composition, and style.

A Sand County Almanac, Aldo Leopold. Oxford University Press, New York, 1969.

The personal reflections and experiences of the heralded naturalist and forester, Aldo Leopold. Through his eyes, readers, including young persons, can glimpse small and grand wonders of nature and better understand the workings of the environment. *Sand County Almanac* is one of the best literary works by a naturalist. Compiled posthumously, the work is composed of three segments: seasonal reflections from Leopold's Wisconsin farm ("shack sketches"); a collection of episodes from his life in various locations around the country; and a final selection of essays on conservation, wildlife, wilderness, and the land ethic. As a classic, the *Almanac* reveals the man and his relationship to the natural world. As a poetic tribute to the wilderness, it is a model for creative self-expression. As an introduction to conservation and wildlife management, it provides a conceptual base, information, and personal encouragement.

"We mourned the loss of the old tree, but knew that a dozen of its progeny standing straight and stalwart on the sands had already taken over its job of wood-making. We let the dead veteran season for a year in the sun it could no longer use, and then on a crisp winter's day we laid a newly filed saw to its bastioned base. Fragrant little chips of history spewed from the saw cut, and accumulated on the snow before each kneeling sawyer. We sensed that these two piles of sawdust were something more than wood: that they were the integrated transect of a century; that our saw was biting its way, stroke by stroke, decade by decade, into the chronology of a lifetime, written in concentric annual rings of good oak."

The Sourcebook of American Institute of Architects

The Sciences of the Artificial, Herbert Simon. MIT Press, Cambridge, MA, 1969.

A thesis on artificial phenomena and their molding by the environment. *Sciences of the Artificial* is the collection of four essays delivered by Simon for the Compton Lectures at the Massachusetts Institute of Technology. Simon explores the process of creating sciences of uniquely human activities—such as administration, economics, and engineering design. As our world becomes increasingly controlled by human design initiatives and their implications, Simon expresses the need to create systems of theory and knowledge which comprehend the activity of human design. Through these essays, Simon examines the natural and artificial worlds, how they interface, and how we create the artificial and design complex systems.

"Engineering, medicine, business, architecture, and painting are concerned not with the necessary but with the contingent—not with how things are but with how they might be—in short, with design. The possibility of creating a science or sciences of design is exactly as great as the possibility of creating any science of the artificial. The two possibilities stand or fall together."

Silent Spring, Rachel Carson. Houghton Mifflin, Boston, 1973.

Published almost two decades ago, this classic has made a profound impact on the course of public policy in America and abroad toward the environment. Acclaimed as a call to arms against detrimental pesticides and shortsighted exploitation of the environment, *Silent Spring* awakened a public environmental consciousness. Fanfare aside, the competent, meticulous research and quiet, prophetic prose of Rachel Carson maintains its unquestionable position in the annals of ecological literature.

"The history of life on earth has been a history of interaction between living things and their surroundings. To a large extent, the physical form and the habits of the earth's vegetation and its animal life has been molded by the environment. Considering the whole span of earthly time, the opposite effect, in which life actually modifies its surroundings, has been relatively slight. Only within the moment of time represented by the present century has one species—man—acquired significant power to alter the nature of his world."

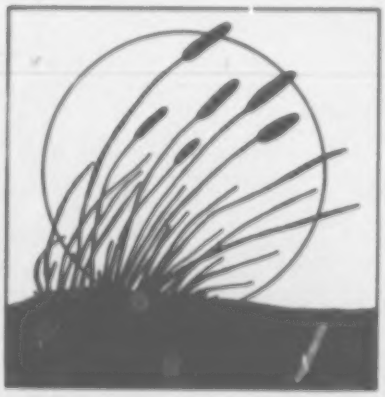
The Sourcebook The American Institute of Architects

Small is Beautiful, Economics as if People Mattered, E.F. Schumacher. Harper and Row, New York, 1973.

Offers a prodigious composition of E.F. Schumacher's thinking on economics, the environment and environmental resources, and technology and lifestyles. As an international spokesman for appropriate technology, Schumacher suggests alternative, decentralized routes to a saner, more productive way of life. *Small is Beautiful,* a collection of essays and speeches prepared over several years of research and travel, discusses the workings of the modern world; the resources with which people may build; the role and example of the Third World in a postindustrial era; and the patterns of organization and ownership of land, resources, and technology.

"There are many activities which are totally uneconomic, but they are carried on for their own sakes. The economists have an easy way of dealing with them: they divide all human activities between 'production' and 'consumption.' Anything we do under the heading of 'production' is subject to the economic calculus, and anything we do under the heading of 'consumption' is not. But real life is very refractory to such classifications, because man-as-producer and man-as-consumer is in fact the same man, who is always producing and consuming at the same time. . . . Even the man who consumes water and soap may be said to be producing cleanliness."

Soft Energy Paths Toward a Durable Peace, Amory B. Lovins. New York, 1977.



A major study on alternative energy technologies and systems of application. Soft technologies are "flexible, resilient, sustainable and benign" solutions to our energy crisis that include solar and wind energy, biomass conversion, cogeneration, and conservation practices and products. Lovins argues that these available soft technologies, when placed within appropriate socio-economic and political systems of energy production and consumption, can alter significantly the outcome of our energy dilemma.

The Sourcebook The American Institute of Architects

So Human An Animal, René Dubos. Charles Scribner's Sons, New York, 1968.

A profound statement on the prospects of humanity and a plea for the humanization of our social institutions and the physical environment. René Dubos, a leading research microbiologist, received a Pulitzer Prize in 1969 for this work in which he explores human responses to sensory and social surroundings. Based on his personal experiences as well as professional observations in the laboratory, Dubos joins science with a philosophical and literary foundation in investigating the dehumanization of our contemporary existence and the opportunities for restoring a more nurturing way of life.

"The name Saint Francis and the word ecology are identified with an attitude toward science, technology, and life very different from that which identified man's future with his ability to dominate the cosmos. The creation of an environment in which scientific technology renders man completely independent of natural forces calls to mind a dismal future in which man will be served by robots and thereby himself become a robot. The humanness of life depends above all on the quality of man's relationships to the rest of creation—to the winds and the stars, to the flowers and the beasts, to smiling and weeping humanity."

The Subversive Science, Paul Shepherd and Daniel McKinley. Houghton Mifflin, Boston, 1969.

A collection of essays on ecology—the subversive science. Ecological topics can be studied; but ecology itself is a perspective, most vividly understood by exploring the thoughts and perceptions of other ecologists. Shepard and McKinley have assembled and edited the works of over thirty ecologists from many different disciplines and backgrounds. The five parts of *The Subversive Science* deal with population, the environment, living things, ecosystems, and thought. *The Subversive Science* provides a clear statement on the motivations of human responsibility.

"Truly, ecological thinking need not be incompatible with our place and time. It does have an element of humility which is foreign to our thought, which moves us to silent wonder and glad affirmation. But it offers an essential factor, like a necessary vitamin, to all our engineering and social planning, to our poetry and our understanding. There is only one ecology, not a human ecology on one hand and another for the subhuman. No one school or theory or project or agency controls it. For us it means seeing the world mosaic from the human vantage without being man-frantic. We must use it to confront the great philosophical problems of man-transience, meaning and limitation, without fear. Affirmation of its own organic essence will be the ultimate test of the human mind."

The American Institute of Architects
The Smithsonian

Tight Spaces, Hard Architecture and How to Humanize It, Robert Sommer. Prentice-Hall, Englewood Cliffs, NJ, 1974.

An analysis of "hard" buildings (impermeable architecture, that resists human imprint), their effects on the occupants and ways to humanize them. Robert Sommer, sociologist and environmental psychologist, discusses the nature and impact of this architecture which results from preoccupations with security, least cost, long life, and low maintenance solutions to public buildings. Prisons, urban centers, subways, airports, and other public buildings are examined for their effects on behavior. Sommer considers alternatives to these dehumanized environments.

"In the natural world, the most common way an organism deals with a noxious situation is physical withdrawal. In urban society people cannot avoid pathogenic conditions such as noise, smog, ugliness, congestion, and brutality. The insult is so encompassing that paralysis and psychological withdrawal substitute for physical avoidance. Giving people small tangible goals which they can realize within the context of their own lives seems the best prescription for change. Painting murals on windowless walls or growing morning glories on the wire fence surrounding the asphalt yard is not going to transform a school but these are steps in the right direction because they reveal that people can affect their environment."

Topophilia, A Study of Environmental Perception, Yi-Fu Tuan. Prentice-Hall, Englewood Cliffs, NJ, 1974.

A major study in perceptions, attitudes, and values which people bring to their interactions with the built and natural environment. *Topophilia* addresses the mysteries of man's complex relationship with his environment, where he is both influenced by and influential in the nature and quality of that environment. Environmental perception and values; cultural differences in and the effects of time and the advancement of Western civilization on topophilia; and the meaning of man-made settings and environmental experiences are themes explored throughout this text. *Topophilia* offers a significant contribution to the field of environmental research.

"The word 'topophilia' is a neologism, useful in that it can be defined broadly to include all of the human being's affective ties with the material environment. These differ greatly in intensity, subtlety, and mode of expression. The response to environment may be primarily aesthetic: it may then vary from the fleeting pleasure one gets from a view to the equally fleeting but far more intense sense of beauty that is suddenly revealed . . . . More permanent and less easy to express are feelings that one has toward a place because it is home, the locus of memories, and the means of gaining a livelihood."

Towards a New Architecture, Le Corbusier. Praeger, New York, 1965.

Le Corbusier's 1920s manifesto on the Machine Age and its opportunities for architecture and engineering. Le Corbusier invokes the spirit of mass production and calls for a functional economy in design and construction. He calls out ocean liners, airplanes and the automobile to exemplify this new spirit and develops his metaphor for the house as a machine for living. *Towards a New Architecture* reveals both the genius of Le Corbusier and the imperatives of the times.

"The history of Architecture unfolds itself slowly across the centuries as a modification of structure and ornament, but in the last fifty years steel and concrete have brought new conquests, which are the index of a greater capacity for construction, and of an architecture in which the old codes have been overturned. If we challenge the past, we shall learn that "styles" no longer exist for us, that a style belonging to our own period has come about; and there has been a Revolution."

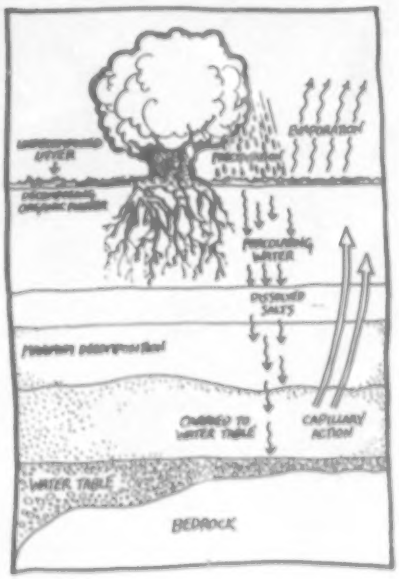
"Tragedy of the Commons," *Science*, vol. 162, Dec. 13, 1968, pp. 1243-8.

A brilliant essay on environmental limits and the management of scarcity. Garrett Hardin uses the metaphor of the New England commons to illustrate the problems of overpopulation and limited resources. Reprinted in scores of periodicals and other texts since its first appearance, *Tragedy of the Commons* has been acclaimed as a benchmark in our understanding of the economics of environmental problems.

"Every new enclosure of the commons involves the infringement of somebody's personal liberty. Infringements made in the distant past are accepted because no contemporary complains of a loss. It is the newly proposed infringements that we vigorously oppose; cries of "rights" and "freedom" fill the air."

The American Institute of Architects
The Sourcebook

Tuning the Green Machine, An Integrated View of Environmental Systems, Institute for Environmental Education. Oceana, Dobbs Ferry, NY, 1978.



A basic text on the principles of practical ecology for public officials, students, and all concerned citizens. *Tuning the Green Machine* presents information on air and water pollution, human health, energy resources, current standards and policies, land use planning, and practical and aesthetic values. The machine metaphor is used to underscore the interconnected workings of multiple environmental systems which require "tuning" when its operation is disrupted. *Tuning the Green Machine* is a practical nuts-and-bolts reference for environmental problem-solving that defines pollution as "resources out of place." The level of detail and sophistication of this material reflects the professional needs of those who are confronted daily with problems requiring basic information on environmental issues. Few reference books provide so consistent a level of useful and diverse information.

Walden, Henry David Thoreau. Houghton-Mifflin, Boston, 1960 (1854).

An account of life with nature by the first American student of the environment. Henry David Thoreau depicts life at Walden Pond through the seasons of 1845–47 and praises the virtues of simple living, oneness with nature, and attention to one's own personal awakening.

"Shall we forever resign the pleasure of construction to the carpenter? What does architecture amount to in the experience of the mass of men? I never in all my walks came across a man engaged in so simple and natural an occupation as building his house. We belong to the community. It is not the tailor alone who is the ninth part of a man; it is as much the preacher, and the merchant, and the farmer. Where is this division of labor to end? And what object does it finally serve? No doubt another may also think for me; but it is not therefore desirable that he should do so to the exclusion of my thinking for myself."

Network

During the past two years, The American Institute of Architects has surveyed over 900 environmental education resource persons and organizations countrywide. The results of that survey are collected here, together with the names of the many persons who have participated in the AIA environmental education program and in the development of The Sourcebook. *This list represents the beginnings of a growing network of people in environmental education.*

In addition to this regional directory of persons and organizations, there is also an annotated listing of national educational, environmental, and professional organizations.

The list has been arranged according to the regional structure of the AIA and is divided as applicable into sections: AIA Regional Contact, State Environmental Education Coordinators, AIA Resource People and Programs, Educational Organizations, Local/Regional Resource Centers, and Community Resource People. Within each of these sections the information is arranged alphabetically by state.

As with all information in The Sourcebo his listing will be updated and expand. *The reply cards found in the back of this book can be used for new listings or revision of current ones. Or write directly to Alan Sandler, Public Education, The American Institute of Architects, 1735 New York Avenue, NW, Washington, DC 20006-5292.*

Regional Divisions of the AIA

California

Central States
- Iowa
- Kansas
- Missouri
- Nebraska
- Oklahoma

Eastern Central States
- Indiana
- Kentucky

Florida/Caribbean

Gulf States
- Alabama
- Arkansas
- Louisiana
- Mississippi
- Tennessee

Illinois

Michigan

Middle Atlantic States
- Delaware
- District of Columbia
- Maryland
- Virginia
- West Virginia

New England
- Connecticut
- Maine
- Massachusetts
- New Hampshire
- Rhode Island
- Vermont

New Jersey

New York

North Central States
- Minnesota
- North Dakota
- South Dakota
- Wisconsin

Northwest
- Alaska
- Hawaii
- Idaho
- Montana
- Oregon
- Washington

Ohio

Pennsylvania

South Atlantic States
- Georgia
- North Carolina
- South Carolina

Texas

Western Mountain States
- Arizona
- Colorado
- Nevada
- New Mexico
- Utah
- Wyoming

California

AIA REGIONAL CONTACT:

Thomas B. Moon, AIA, President-Elect
Orange County Chapter
Thomas Moon & Associates
2234 Newport Blvd.
Newport Beach, CA 92663
(714) 673-0641

AIA Public Education Committee

STATE EE COORDINATOR:

Rudolph Schafer
EE Coordinator
State Department of Education
State Education Bldg.
721 Capitol Mall
Sacramento, CA 95814
(916) 323-2602

Coordinates staff development.

Operates a state grants program.

Developed a state EE curriculum framework based on total EE and value clarification.

Offers information, assistance and library resources.

Annual environmental merit award offered to outstanding student conservation projects.

AIA RESOURCE PEOPLE AND PROJECTS:

LONG BEACH
Maxine Towne, Executive Director
Cabrillo Chapter
121 Linden Ave.
Long Beach, CA 90802

SACRAMENTO
Paul W. Welch, Executive Vice President
California Council of Architects
1414 K St., Suite 320
Sacramento, CA 95814

SAN DIEGO
Donalee Deffenbach, Executive Director
San Diego Chapter
233 "A" St. #207
San Diego, CA 92101

EDUCATIONAL ORGANIZATIONS:

SACRAMENTO
Hal Hallett, President
Western Interpreters Association
P.O. Box 28366
Sacramento, CA 95828

Forum for information and ideas exchange between educators and interpreters.

EE emphasis on historical and cultural interpretations.

Publishes a magazine, *The Interpreter.*

SAN DIEGO
Carolyn Barry, Coordinator
Interface Network
Built Environment Education Program
936 C St.
San Diego, CA 92101

Cooperative effort of school, community, and construction industry.

Offers expertise in teaching, community service, project management, instructional design, industrial technology, and materials development.

LOCAL/REGIONAL RESOURCE CENTERS:

BERKELEY
Beverly Bense, Associate
The Ecology Center
2701 College Ave.
Berkeley, CA 94705

Conducts Eco-Kids Environmental Education program.

Developed an elementary school teaching guide, *First Steps in Ecology.*

Dave Buller, OBIS Coordinator
Outdoor Biology Instructional Strategies
Lawrence Hall of Science
University of California
Berkeley, CA 94720

Coordinates the OBIS Program.

Comprehensive sets of outdoor education activities now available through commercial publisher (See Model Program Description).

Over ninety-five OBIS resource centers operating around the country.

Training workshops, films, newsletter available.

LOS ANGELES
Doreen G. Nelson, Director
Center for City Building Education Programs
2210 Wilshire Blvd.
Suite 303
Santa Monica, CA 90403

Offers consulting services, training and materials for a comprehensive program in city building.

SAN FRANCISCO
Bill Hammerman, Professor of Education
San Francisco State University
1600 Holloway Ave.
San Francisco, CA 94132

Provides information on local resources.

Is familiar with activities and projects in EE (especially the built environment) for K–12, in addition to materials and teaching strategies.

COMMUNITY RESOURCE PEOPLE:

DOWNEY
Jack Davidson
County Office of Education
9300 E. Imperial Hwy.
Downey, CA 90242

Consultant to L.A. Schools

Provides units or parts of various EE resources to teachers and serves local EE programs.

HAYWARD
Donald Lundstrom
Alameda County Office of Education
685 A St.
Hayward, CA 94541

Director; Curriculum and Instructional Support

Assists county EE programs, e.g. Marine Ecology Research (MER) Projects, State EE Guide, Instructional Planning, staff development, and workshops.

Available materials include MER teacher guides (5–12), state EE guide (K–12).

Serves Alameda County area.

HUMBOLDT
EE Program
Humboldt County Office of Education
Environmental Education Program
901 Myrtle Ave.
Eureka, CA 95501

Has developed a comprehensive EE program for K–8 contained in the *Green Box.*

Central States

AIA REGIONAL CONTACT:

Vernon Reed, AIA
Reed Architects
15 W. 10th Street
Kansas City, MO 64105
(816) 421-0200

AIA Public Education Committee

Available materials include: *MO Design for Conservation Education,* (Dept. of Conservation); *MO State Plan for EE,* (Dept. of El & Sec. Ed.); *MO Energy Packets* and *MO EE Guide* (Dept. of Natural Resources).

Distributes EE materials quarterly; includes a "Man & Environment Packet."

STATE EE COORDINATORS:

IOWA
DES MOINES
Duane Toomsen
Department of Public Instruction
Grimes State Office Bldg. 50B
Des Moines, IO 50319
(515) 281-3264

KANSAS
TOPEKA
Clayton Stultz
State Department of Education
120 East 10th Street
Topeka, KS 66612
(913) 296-4935

MISSOURI
JEFFERSON CITY
Robert Taylor
State Department of Education
Division of Public Schools
Jefferson Bldg. Box 480
Jefferson City, MO 65101
(314) 751-2625

Has developed a K–12 curriculum for all subject areas covering conservation, energy, and environmental education concepts and activities.

NEBRASKA
LINCOLN
Don Woodburn
State Department of Education
P.O. Box 94987
Lincoln, NE 68509
(402) 471-2446

OKLAHOMA
OKLAHOMA CITY
Eugene Smith
State Department of Education
2500 North Lincoln Blvd.
Oklahoma City, OK 73015
(405) 521-3361

Conducts in-service workshops, develops EE materials and guides.

Operates Project SEEK, a computer search service for teachers.

Available materials include: *Conservation Handbook, Outdoor Education Guide,* among others.

AIA RESOURCE PEOPLE AND PROGRAMS:

IOWA
DES MOINES
Claudia R. Cackler, Executive Director
Iowa Chapter
512 Walnut
Des Moines, IO 50309

KANSAS
TOPEKA
Bill Curtis, Executive Director
KS Society of Architects
724 Kansas Ave.
Topeka, KS 66603

MISSOURI
KANSAS CITY
Linda Ervin Young, Executive Director
Kansas City Chapter
20 W. Ninth St.
Kansas City, MO 64105

ST. LOUIS
Betty Lou Custer, FAIA,
Executive Vice President
St. Louis Chapter
919 Olive St.
St. Louis, MO 63101

Very active chapter, conducts field trips, seminars, and teacher training programs.

Funds its own architect in area schools.

AIA Public Education Committee

ST. LOUIS
Janet Rothberg White , AIA
7616 Carswold
St. Louis, MO 63105

AIA Public Education Committee

NEBRASKA
OMAHA
Jean Gardiner Muntz,
Executive Secretary
Nebraska Society of Architects
1910 S. 44th St.
Omaha, NE 68105

OKLAHOMA
OKLAHOMA CITY
Mabel Krank, Hon. AIA,
Executive Secretary
Oklahoma Council of Architects
405 N.W. 15th St.
Oklahoma City, OK 73103

LOCAL/REGIONAL RESOURCE CENTERS:

MISSOURI
ST. LOUIS
Karlene McAllister, Public Affairs Coordinator
Coalition for the Environment
6267 Delmar
St. Louis, MO 63130

Provides speakers, information materials, and resources including slide shows, library, and referrals to other groups.

OKLAHOMA
ADA
Don Kellogg, Prof. Science Education
East Central University
Ada, OK 74820

Teaches Conservation Education Leadership training and Energy Education seminars that provide concepts and curriculum for teachers.

Provides consulting services in curricular information as well.

STILLWATER
Dr. Ted Mills, Director
Natural Resources and Environmental Education Center
College of Education
Oklahoma State University
Stillwater, OK 74074

Has developed curriculum in areas of solid waste disposal and recycling, water, energy resource education.

Offers several teacher training programs which emphasize multidisciplinary and holistic approaches to EE.

COMMUNITY RESOURCE PEOPLE:

KANSAS
TOPEKA
C. L. Kellogg
Topeka Public Schools USD 501
125 SE 27th St.
Topeka, KS 66605

Conducts the Topeka Outdoor EE Program, a sequential 1-12 grade effort.

Available materials include program description, 1-12 grade curriculum material.

Facilitates a variety of EE workshops in Topeka (15,000 students) and in region (e.g. OEE workshops).

NEBRASKA
BELLEVIEW
Steve McCaw
Project Plum
700 Camp Gifford Rd.
Belleview, NE 68005

A comprehensive 7-12 grade program on land-use, includes teacher guide, student booklet, audiovisual material, and worksheets.

OMAHA
Craig K. Fullerton
Omaha Public Schools
3902 Davenport St.
Omaha, NB 68131

As Assistant Superintendent of Instruction has incorporated EE into area schools.

Grades 6 and 8 involved in outdoor education program; 9th grade geography class has adopted "Geography in an Urban Age" curriculum; industrial education classes stress design and construction.

OKLAHOMA
GUYMON
Tamara Tucker
Box 130
Guymon Public Schools
Guymon, OK 73942

Teaches the school's outdoor program centered on 15-acre outdoor site; curriculum covers food, water, energy, and conservation.

The site houses solar-heated greenhouse and classroom; wind-generated well; and windmill, ponds, and waterwheel, etc.

Materials available include ten units (4-9 grades) at $1.00 each; more being developed; slide presentation also available.

MOORE
Jimmie Pigg
Moore Public Schools
300 N. Edsten
Moore, OK 73160

Science coordinator, teaches outdoor school to 5th grade, Project Research 7-12 grades and outdoor activities for 3rd graders.

Has lesson plans and grades for teachers available.

Site for outdoor school is on 5,000 acres in Lexington.

The Sourcebook The American Institute of Architects

Eastern Central States

AIA REGIONAL CONTACT:

Kenneth A. Englund, Executive Director
Indiana Society of Architects
148 N. Delaware St.
Indianapolis, IN 46204
(606) 255-7435

STATE EE COORDINATORS:

INDIANA
INDIANAPOLIS
Joe Wright
Department of Public Instruction
Room 229 State House
Indianapolis, IN 46204
(317) 927-0111

Offers consulting services to local education agencies (LEA) with in-service training, curriculum development, and evaluation.

State Environmental Education Guideline K–12 and a state energy education curriculum are available.

Two state consultants and twenty CADRE assist with dissemination of materials throughout Indiana.

Total EE program (won NAEE award) involves over 25,000 teachers in state.

KENTUCKY
FRANKFORT
Nancy Stearns Theiss
Environmental Education
Department of Education
Frankfort, KY 40601
(502) 564-2672

Coordinates, initiates, and helps maintain environmental education programs for KY schools.

Offers consulting services and workshop facilitation.

Available materials include: *Energy Conservation Activities for the Classroom, Building Outdoor Classrooms, KAEER Fair Resource Guide, A Teacher's Guide to Energy Resources in KY.*

AIA RESOURCE PEOPLE AND PROGRAMS:

INDIANA
GARY
Horace Cantrell Jr., AIA, President
Northern Indiana Chapter
Cantrell H. Seay Associates
522 Broadway
Gary, IN 46402

MUNCIE
Uwe F. Koehler
Professor of Architecture
Ball State University
College of Architecture and Planning
Muncie, IN 47306

AIA Public Education Committee

KENTUCKY
LEXINGTON
Darryl R. Callahan, Executive Director
Kentucky Society of Architects
120 Kentucky Ave.
Lexington, KY 40502

LOCAL/REGIONAL RESOURCE CENTERS:

INDIANA
NOTRE DAME
Patrick Horsbrugh, Director
Environic Foundation International
P.O. Box 88
Notre Dame, IN 46556

Research and development conducted on Environic Design concepts; involves the use of ecological disciplines in structural design.

COMMUNITY RESOURCE PEOPLE:

INDIANA
FORT WAYNE
James R. Manak
Homestead High School
4310 Homestead Rd.
Fort Wayne, IN 46804

Environmental Science teacher at 10–12 grade level; involved in EE for past twelve years.

Sponsors environmental trips to the Rockies and Canada and maintains an environmental science area on school property.

Makes multimedia presentations.

KENTUCKY
ANCHORAGE
Kenny Karem
124 Franck Ave.
Louisville, KY 40206

Social Studies, English and EE teacher in middle school and junior high.

Runs multidisciplinary field trips for all grades to the Falls of the Ohio, a proposed national monument (fossil reef, dams, Portland canal, historic railroad bridge, wildlife habitats, etc.).

Several pamphlets available: Geology of the Falls of the Ohio (U.S. Geological Survey), *A Journey to the Falls,* Clay Baird, McAlpine Locks (Army Corps of Engineers).

Florida/Caribbean

AIA REGIONAL CONTACT:

John E. Stefany, FAIA
McElvy, Jennewein, Stefany and Howard
102 W. Whiting St.
Suite 502
Tampa, FL 33602
(813) 228-7721

AIA Public Education Committee

STATE EE COORDINATOR:

Richard Tillis
Office of Environmental Educ.
State Department of Education
W. V. Knott Bldg.
Tallahassee, FL 32312
(904) 488-6547

The built environment has been the focus for past two years.

Mini-grants for over 1000 EE programs through state office.

AIA RESOURCE PEOPLE AND PROGRAMS:

FLORIDA
GAINESVILLE
John M. McRae, AIA
Assistant Dean
Department of Architecture
University of Florida
Gainesville, Fl 32611

Has developed a teacher guide and student workbook called *Symbiosis 3—Man and His Need for Shelter,* used in several local elementary schools.

AIA Public Education Committee

TALLAHASSEE
George A. Allen, Executive Vice President
Florida Association of Architects
P.O. Box 10388
117 W. College
Tallahassee, FL 32302

TAMPA
David W. Lawson, AIA
Lawson/Wedding Architects
4112 Cypress St.
Tampa, FL 33609

Teaches in the classroom; works with architects and teachers to assist student projects.

AIA Public Education Committee

PUERTO RICO
SAN JUAN
Rafael A. Dueno, AIA, President
Puerto Rico Chapter
P.O. Box 40283
San Juan, PR 00940

VIRGIN ISLANDS
ST. THOMAS
Donna Dejongh, AIA, President
Virgin Islands Chapter
P.O. Box 156
St. Thomas, VI 00801

LOCAL/REGIONAL RESOURCE CENTERS:

FLORIDA
FT. MYERS
Bill Hammond, Director
Lee County Environmental Education Center
5456 Parker Dr.
Ft. Myers, FL 33902

Nature center, workshops, and local programs on natural and human-designed environments.

JACKSONVILLE
Richard Sykes, Science Curator
Jacksonville Museum of Arts and Sciences
1025 Gulf Life Dr.
Jacksonville, FL 32207

Provides teacher workshops on "The City Is . . ." and "Getting Around in the City."

Conducts fourth and sixth grade program on city tours.

Gulf States

AIA REGIONAL CONTACT:

Carl F. Burmeister, Jr. AIA
P.O. Box 9059
Mobile, AL 36609
(205) 343-0120

AIA Public Education Committee

STATE EE COORDINATORS:

ALABAMA
MONTGOMERY
Donna Bentley
State Department of Education
Basic Science Section
111 Coliseum Blvd.
Montgomery, AL 36109
(205) 832-5850

Provides EE information and training, focus on outdoor and energy education.

ARKANSAS
LITTLE ROCK
Bill Fulton
State Department of Education
Bldg. 404B
Little Rock, AR 72201
(501) 371-2791

Supports energy and EE with workshops and curricula.

Available materials include the chapter, "The Built Environment of Arkansas" from "Reading the Environment" (Xerox copy), and "Urban Score," a field trip guide.

LOUISIANA
BATON ROUGE
Don McGehee
State Department of Education
Box 44064
Baton Rouge, LA 70804
(504) 342-3420

Disseminates EE information from various resource agencies, conducts workshops, and develops curriculum.

MISSISSIPPI
JACKSON
Michael Carothers
State Department of Education
Division of Instruction
Box 771
Jackson, MS 39205
(601) 354-6955

TENNESSEE
COOKEVILLE
John Bennett
State Department of Education
P.O. Box 5077
Tennessee Tech
Cookeville, TN 38501
(615) 528-5431

In 1980 EE along with science and conservation education were integrated into 1-8 grade curriculum and developed as separate courses in 9–12 grades.

EE resource guide with activities is available along with in-service training.

AIA RESOURCE PEOPLE AND PROGRAMS:

ALABAMA
MONTGOMERY
Jay C. Leavell, Hon. AIA,
Executive Secretary
Alabama Council of Architects
P.O. Box 237
Montgomery, AL 36101

ARKANSAS
LITTLE ROCK
George Wildgen, Hon. AIA,
Executive Director
Arkansas Chapter
P.O. Box 2233
Little Rock, AR 72203

LOUISIANA
BATON ROUGE
Dick Thevenot, Hon. AIA,
Executive Director
Louisiana Architects Association
820 N St.
Baton Rouge, LA 70802

MISSISSIPPI
JACKSON
Kathy C. Jackson, Executive Secretary
Mississippi Chapter
P.O. Box 12515
Jackson, MS 39211

TENNESSEE
NASHVILLE
Connie W. Hoffman, Executive Director
TN Society of Architects
223½ Sixth Ave., No.
Nashville, TN 37219

LOCAL/REGIONAL RESOURCE CENTERS:

LOUISIANA
BENTON
Jim Robbins, Director
Bossier Environmental
Education Center
Linton Rd.
Benton, LA 71006

An environmental study center for the Bossier Parish School System.

Provides in-service training and materials on request to teachers.

The site is 100 acres of woodland surrounding a 31-acre lake.

SHREVEPORT
J. Ashley Sibley, Jr., Director
Grindstone Bluff Museum and
Environmental Ed. Center
P.O. Box 7965
Shreveport, LA 71107

Maintains the museum exhibits, research projects, nature trail resources, and library reference material.

TENNESSEE
KNOXVILLE
Environment Center
University of Tennessee
South Stadium Hall
Knoxville, TN 37916

Develops many material resources on energy and EE education.

MEMPHIS
Assoc. for Preservation
of Tenn. Antiquities
Memphis Chapter
680 Adams Ave.
Memphis, TN 38105

Lecture tours on economics of neighborhoods during 1870–90; effects of gold strikes, yellow fever, etc. and the relation of climate to housing design.

MEMPHIS
Ron W. Cleminson, Director
Center for Environment and
Energy Education
College of Education
Dept. of Curriculum and Instruction
Memphis State University
Memphis, TN 38152

Teaching, service, research center for both formal and informal education.

EE and energy education resource library maintained that houses curricular materials, periodicals, texts, facts, and statistics.

Serves as a clearinghouse for area groups from schools, civic clubs, government agencies, etc.

MURFREESBORO
Dr. Race Bergman, Director
Environmental Education Program
Middle Tennessee State University
Box 512
Murfreesboro, TN 37132

Provides a limited amount of urban planning and energy materials.

OAK RIDGE
Philip Johnson, Director
Oak Ridge Associated Universities
P.O. Box 117
Oak Ridge, TN 37830

Offers energy mini-courses on various energy topics, designed for teachers to use as units or integrated into their own curriculum.

COMMUNITY RESOURCE PEOPLE:

ALABAMA
TUSCALOOSA
John Sheffield
Tuscaloosa County High School
1416 Caplewood Dr.
Tuscaloosa, AL 35401

Elementary School EE teacher

Teachers summer course at University of Alabama Museum of Natural History, where 3–6 graders learn about nature through outdoor activities and field trips.

ARKANSAS
STUTTGART
Tana Beasley
Stuttgart High School
Stuttgart, AR 72160

High school science teacher; has taught from the state resource, *Reading the Environment.*

LOUISIANA
ST. MARTINVILLE
Isadore Inman
St. Martin Parish Schools
305 Washington St.
St. Martinville, LA 70582

Supervisor EE Program

Teaches K–12, outdoor activities nature trail in the parish; has environmental curriculum guides and offers EE workshops to teachers.

The Sourcebook The American Institute of Architects

Illinois

AIA REGIONAL CONTACT:

Gary L. Olsen, AIA
Olsen-Lytle Architects
315 South State
Champaign, IL 61820
(217) 359-3453

AIA Public Education Committee

Recently developed an award winning curriculum, *Historic Preservation Education.*

STATE EE COORDINATOR:

Don Roderick
Illinois Office of Education
100 North First St.
Springfield, IL 62777
(217) 782-0360

1957 legislation requiring EE be taught in all public schools.

Each school district has an EE coordinator.

Energy/Environmental computer simulator available—NORCUS.

AIA RESOURCE PEOPLE AND PROGRAMS:

SPRINGFIELD
Shirley J. Novell, Executive Director
Illinois Council of Architects
520 S. Second, Suite 802
Springfield, IL 62701

LOCAL/REGIONAL RESOURCE CENTERS:

CHARLESTON
Dr. Don Rogers, Professor EE
Eastern Illinois University
Charleston, IL 61920

CHICAGO
Jethro Hurt, Director
Chicago Architecture Foundation
1800 South Prairie St.
Chicago, IL 60607

URBANA
G. Day Ding, Department Head
Department of Architecture
University of Illinois—Urbana
Urbana, IL 61801

Walter H. Lewis, Professor, has developed a curriculum about "People Learning About Their Environments."

Thornburn Environmental
Awareness Center
c/o Urbana Park District
Urbana, IL 61801

WARRENVILLE
Steve Van Matre
Acclimatization Experiences Institute
P.O. Box 238
Warrenville, IL 60555

Developed and sponsors outdoor education workshops for teachers and students.

COMMUNITY RESOURCE PEOPLE:

CHAMPAIGN
Dan McCollum
713 Arlington Court
Champaign, IL 61820

EE teacher for nine years; has compiled classroom and community experiences into *Your Life and Mine—Problems and Projects in Conservation for Jr. High and Middle Schools.*

The American Institute of Architects
The Sourcebook

Michigan

AIA REGIONAL CONTACT:

Ann Stacy, Hon. AIA
Executive Director
Michigan Society of Architects
553 E. Jefferson
Detroit, MI 48226
(313) 965-4100

STATE EE COORDINATOR:

Jack Kammeraad
State Department of Education
P.O. Box 30008
Lansing, MI 48909
(517) 373-1484

EE guidelines established in 1971 and DOE responsibilities assigned in 1980 Act.

Coordinates state activities, workshops, materials distribution, etc.

LOCAL/REGIONAL RESOURCE CENTERS:

BIRMINGHAM
Ginny Finny
Birmingham Environmental Center
23400 West 13 Mile Rd.
Birmingham, MI 48010

BLOOMFIELD HILLS
Cranbrook Environmental Education Project
Cranbrook Academy of Art
Box 806
500 Lone Pine Rd.
Bloomfield Hills, MI 48103

Longstanding program in EE includes Design Michigan Project; posters, curriculum guides, pamphlets available; workshops and conferences.

DETROIT
Dr. John T. Norman
Wayne State University
289 College of Education Bldg.
Detroit, MI 48202

Professor of Education familiar with EE programs, e.g. BSCS, ISCS.

EAST LANSING
Dr. Martin T. Heatherington
Science and Mathematics Teaching Center
Michigan State University
E37 McDonel Hall
East Lansing, MI 48824

Project Director for Regional Environmental Planning Project; has developed a teaching guide and supplemental materials.

KALAMAZOO
Dr. Phillip T. Larsen
Director of the Science and Math Center.
Science and Math Education Center
Western Michigan University
B-302 Ellsworth Hall
Kalamazoo, MI 49008

COMMUNITY RESOURCE PEOPLE:

SOUTH LYON
David J. Larwa
Sayre Elementary School
23000 Valerie
South Lyon, MI 48178

Elementary science teacher involved with EE for past seven years, particularly associated with facilities planning and EE school sites.

The Sourcebook The American Institute of Architects

Middle Atlantic States

AIA REGIONAL CONTACT:

Ted Kvell, AIA
Kvell-Corcoran Architects
2311 Calvert St. NW
Washington, DC 20008
(202) 462-3668

AIA Public Education Committee

STATE EE COORDINATORS:

DELAWARE
DOVER
John Cairns
State Department of Public Instruction
John G. Townsend Bldg.
Dover, DE 19901
(302) 678-4885

Dissemination of materials and in-service training (workshops in environmental structures, first offered Spring '80).

DISTRICT OF COLUMBIA
Mary Harbeck
CBC Center
Longdon Elementary School
20th and Evarts St. NE
Washington, DC 20018
(202) 576-6580

Supervising director for science in district.

MARYLAND
BALTIMORE
James Latham
State Department of Education
P.O. Box 8717
BWI Airport
Baltimore, MD 21240
(301) 796-8300

Materials development and in-service training in EE.

Maryland Approach to EE Includes scientific, technological, social, and aesthetic dimensions.

VIRGINIA
RICHMOND
Teresa Myer Auldridge
State Department of Education
Box 6Q
Richmond, VA 23216
(804) 786-2676

Science Education Service

Directs statewide K–12 science program with responsibilities in the area of environment and energy education.

Provides consultant services and publications.

WEST VIRGINIA
CHARLESTON
Robert Seymour
State Department of Education
Capitol Complex
Rm B-330, Bldg 6
Charleston, WVA 25305
(304) 348-7805

Provides in-service training and consultation.

Focuses on EE, energy, and technology.

AIA RESOURCE PEOPLE AND PROGRAMS:

DELAWARE
WILMINGTON
Richard L. Dayton, AIA, President
Delaware Society of Architects
V & S Homsey, Inc. Architects
2003 N. Scott St.
Wilmington, DE 19806

Active in Architects-in-Schools program.

Program with Delaware Art Museum.

DISTRICT OF COLUMBIA
Jane Dougherty, Hon. AIA
Executive Secretary
Wash. Metropolitan Chapter
1777 Church St. NW
Washington, DC 20036

MARYLAND
BETHESDA
Ronald S. Ryner, Executive Director
MD Society of Architects
4948 St. Elmo Ave.
Bethesda, MD 20014

VIRGINIA
RESTON
Wayne L. Hughes, AIA
Hughes Group Architects
1606 Washington Plaza
Reston, VA 22090

The American Institute of Architects

RICHMOND
Thomas L. Osborne, Executive Director
VA Society of Architects
15 S. Fifth St.
Richmond, VA 23219

WEST VIRGINIA
CHARLESTON
Roberta J. Guffey, Executive Secretary
WVA Society of Architects
165 Lake Shore Dr.
Charleston, WV 25313

LOCAL/REGIONAL RESOURCE CENTERS:

DISTRICT OF COLUMBIA
(Ed.'s note: Many D C resource centers and organizations are presented in the section on national resources.)

Ann W. Lewin, Executive Director
Capital Children's Museum
800 3rd St. NE
Washington, DC 20002

Provides a model for the use of space to create environments that can be imaginative, realistic, flexible, etc. as a setting for different educational experiences.

MARYLAND
ANNAPOLIS
Karin E. Peterson,
Director of Interpretation
Historic Annapolis, Inc.
18 Pinkney St.
Annapolis, MD 21401

Provides pre-tour presentation to introduce students to the evolution of local architecture.

Offers 3D models and slides for all grade levels, coordinated with a walking tour which uses the town and its buildings as a vehicle for learning history.

BALTIMORE
Michael J. Baker, Naturalist
Clyburn Park/Museum
Bureau of Parks—Horticultural
4915 Greenspring Ave.
Baltimore, MD 21209

Provides instruction on basic landscape, ecology/energy/history and the natural history of the area.

ELLICOTT CITY
Thomas M. Franklin,
Executive Director
Urban Wildlife Research Center, Inc.
4500 Sheppard Lane
Ellicott City, MD 21043

Maintains library of materials on urban wildlife.

Has worked with teachers on environmental curriculum and makes presentations on EE programs in local schools.

VIRGINIA
MILLWOOD
R. C. Plater, Jr., Manager
Burwell-Morgan Mill
Clark County Historical Association
Millwood, VA 22646

Grist mill producing corn meal and flour, powered by water that turns an overshot wheel, gear train, and two pairs of millstones.

Half-hour conducted tour explaining hydraulics, machinery, history, environmental values.

NEWPORT NEWS
John Burnham, Director of Education
Peninsula Nature and Science Center
524 J. Clyde Morris Blvd.
Newport News, VA 23601

Some exhibits dealing with colonial buildings and uses of buildings for homes, agriculture, and industries.

ROANOKE
Bernice Smith, Education Coordinator
Roanoke Valley Science Museum
2323 Overlook Rd. NE
Roanoke, VA 24012

Ecology exhibit at museum and community. Outreach Exhibit of life zones found in Virginia plus food chains—terrestrial and oceanic communities; audiovisual programs on ecological topics presented upon request, usually from schools.

Leads workshops for citizens, teachers, and students in outdoor activities.

Museum exhibits, ample outdoor [illegible] to study, three full-time staff educators trained in environmental sciences.

WEST VIRGINIA
MORGANTOWN
David L. McCrory, Professor
Technology Education
West Virginia University
2929 University Ave.
Morgantown, WV 26506

Involved in the graduate and community education concerning new options for energy-efficient shelters and facility planning for schools.

COMMUNITY RESOURCE PEOPLE:

DELAWARE
WILMINGTON
Karin Hearn
Delaware State Arts Council
State Office Bldg. 9 and French
Wilmington, DE 19801

Coordinator of the Artists-in-Schools program for the state.

DISTRICT OF COLUMBIA
Howard White
Capitol Page School
Library of Congress
Washington, DC 20540

Conducts course on physical science: social issues which focus on the ecology and energy aspects of the environment, both urban and rural.

MARYLAND
BALTIMORE
Steven Alpern
Barclay Elementary School
2900 Barclay St.
Baltimore, MD 21218

Involved in the GATE program for gifted and talented 1–6 graders on math and sciences.

Is a consultant to teachers in EE.

Susan Christenbury
Carver Vocational High School
2201 Prestman St.
Baltimore, MD 21216

High school chemistry and physics teacher involved in teaching about the environment in the Chesapeake Bay area.

VIRGINIA
FALMOUTH
Jon Slocum
Stafford County Schools
P.O. Box 5099
Rt. 627 and Cranes Corner
Falmouth, VA 22401

Director of project AIMIE, a program on energy and energy conservation which includes multidisciplinary mini-units, staff development activities, community involvement, student research and design projects.

ORANGE
Pam R. Moran
Orange Schools
P.O. Box 349
Orange, VA 22960

Project Director of COMSEP, Comprehensive School Ecology Project, an EE program K–12 grades, serving 4,000 students in county, providing information and decision-making skills to evaluate environmental issues.

EE curriculum materials available on topics of energy, citizen involvement in EE, overpopulation, etc. Some consultant work is available.

WEST VIRGINIA
LOOKOUT
Mary Jo Davison
Nuttall Middle School
Lookout, WVA 25868

Middle School science teacher, specialist in use of outdoor classrooms, environmental clubs/projects, and in-service training of teachers in EE.

WEST UNION
Richard H. Beck
Doddridge County Schools
Office of the Superintendent
West Union, WVA 26455

Outdoor education specialist for whole county, in nature study, camping activities, EE.

Is familiar with EE programs and materials.

Works with 1,100 K–8 students in county.

The Sourcebook The American Institute of Architects

New England

AIA REGIONAL CONTACT:

Kenneth J. Filarski, AIA
43 Page Street
Providence, RI 02903
(401) 861-2030

AIA Public Education Committee

STATE EE COORDINATORS:

CONNECTICUT
HARTFORD
Sigmund Abeles
State Department of Education
P.O. Box 2219
Hartford, CT 06115
(203) 566-4825

EE Program dissemination and in-service training.

Current emphasis on energy education.

MAINE
GARDINER
Dean Bennett
Gardiner School District
RFD #5A
Gardiner, ME 04345
(207) 582-1332

Has a state EE plan but no full time staffer for past four years.

Can recommend resource and curriculum materials.

In-service training available through University of Maine.

MASSACHUSETTS
BOSTON
Judith Dortz
State Department of Education
31 St. James Ave.
Boston, MA 02116
(617) 727-5518

With school district autonomy, state role is supported.

Offers networking, conferences, and references.

NEW HAMPSHIRE
CONCORD
William Ewert
State Department of Education
64 North Main St.
Concord, NH 03301
(603) 271-3293

Supports diverse approaches to EE by autonomous school districts.

Organizes and co-sponsors workshops.

Disseminates material and responds to teacher requests.

RHODE ISLAND
PROVIDENCE
H. Wells French
State Department of Education
235 Promenade St.
Providence, RI 02908
(401) 277-3840

Recently conducted a state survey on EE in Rhode Island.

Offers information on several EE Programs.

State EE Association also assists teachers.

RI in a Box still available: A trunk with activities and artifacts about RI history and built and natural environments.

VERMONT
MONTPELIER
George Tanner
State Department of Education
120 State St.
Montpelier, VT 05602
(802) 828-3111

EE focuses on natural systems and outdoor education.

Energy education prominent.

Three teaching centers in state for energy and education.

The American Institute of Architects
The Sourcebook

AIA RESOURCE PEOPLE AND PROGRAMS:

CONNECTICUT
HARTFORD
James C. Lawler, AIA
Hartford Design Group
292 South Marshall St.
Hartford, CT 06105

AIA Public Education Committee

NEW HAVEN
Peter Borgemeister, Executive Director
CT Society of Architects
85 Willow St.
New Haven, CT 06511

MAINE
HALLOWELL
Judith W. Harvie, Executive Director
Maine Chapter
1 Middle St.
Hallowell, ME 04347

MASSACHUSETTS
BOSTON
Lowell Erickson, Executive Director
MA State Association of Architects
320 Newbury St.
Boston, MA 02115

CAMBRIDGE
G. W. Terry Rankine, FAIA, President
MA State Association of Architects
Cambridge Seven Associates, Inc.
1050 Massachusetts Ave.
Cambridge, MA 02138

NEW HAMPSHIRE
CONCORD
Richard H. Clough, CAE, Executive Director
New Hampshire Chapter
43 S. State St.
Concord, NH 03301

VERMONT
WAITSFIELD
Hanne N. Williams, Executive Secretary
New England Regional Council
RFD #1 Box 67
Waitsfield, VT 05673

LOCAL/REGIONAL RESOURCE CENTERS:

CONNECTICUT
AVON
Donald La Salle, Director
Talcott Mountain Science Center for Student Involvement, Inc.
Montevideo Rd.
Avon, CT 06001

A science and research education facility offering programs to students, teachers and administrators all over CT. Programs cover kindergarten through graduate level in the areas of computer sciences, astronomy, meteorology, geology, ecology, chronobiology, and all the natural sciences, including alternate energy education.

Classes, tours, and workshops are available in all areas by arrangement only. Summer programs are also available for grades K–12.

Serves CT and some towns in MA and NY.

NEW BRITAIN
Alan Krauss, Director
New Britain Youth Museum
30 High St.
New Britain, CT 06051

Several youth programs including: 1st Gr., Outdoors—A Schoolyard Adventure; Gr. 3, Safari and A Museum Food Chain Study; and Gr. 5, A Trail Experience—Natureways.

Trail guides, Indoor/Outdoor Game Booklet, Teachers Guide To Schoolyard Nature Activities.

Serves central CT region.

NEW HAVEN
Larry Schaefer, Director
Environmental Education Center
800 Dixwell Ave.
New Haven, CT 06511

A resource center for schools in environmental education which provides services to teachers and administrators.

Teacher Training, Curriculum Development. Land Use Decision Making Kit, ECO-Kit, Earthwatch Vol. I, II, and III.

Serves central CT—twenty-seven school districts.

MAINE
GARDINER
Dean Bennett, Director
Maine Studies Program
Gardiner Regional Jr. H.S.
RFD #5A
Gardiner, ME 04333

A K–12 science and social studies program producing curriculum and resources on Maine's government, environment, economy, and social life which reflect the goals of environmental education.

Sourcebooks, teaching guides, and student textbooks available from publisher: Down East Books, Box 679, Camden, ME 04843. Advice on implementation from the director.

Serves the state of Maine.

ORONO
Sherman Hasbrook, Director
University of Maine
Orono, ME 04469

Materials and slide programs.

MASSACHUSETTS
CAMBRIDGE
Joyce Meschan, President
VISION, Inc.
Center for Environmental Design and Education
219 Concord Ave.
Cambridge, MA 02138

Provides consulting services and research in urban design, neighborhood conservation, EE, and historic interpretation.

Has developed *Street Smart*, a built environment education program. (See Model Program description.)

LINCOLN
Hatheway Environmental Education Institute
Massachusetts Audubon Society
Lincoln, MA 01773

Information and service center for educators.

Houses an extensive collection of teaching material and resources.

Offers consulting services, workshop training, newsletter.

Located opposite wildlife sanctuary.

Serves the state and New England region.

NEW HAMPSHIRE
HANOVER
Allie Quinn, Director
Regional Center for Educational Training
Lyme Rd.
Hanover, NH 03755

Long history in environmental education. Has completed a U.S. grant on futurism.

Material sources and in-service training for teachers in approximately eighty schools.

Serves the state of New Hampshire.

RHODE ISLAND
NEWPORT
Kay Neville, Director
Project Environmental Quotient
Dexter St.
Newport, RI 02840

Assessing the quality of land use, air, water, and the size of population of your community.

Project Environmental Quotient Manual; state and community resources; resource specialists; leader training session.

Serves the state of Rhode Island.

VERMONT
BURLINGTON
Thomas Hudspeth, Assistant Director
University of Vermont
Environmental Program
153 S. Prospect
Burlington, VT 05401

Graduate and undergraduate courses in environmental education, aesthetic awareness, environmental interpretations, historic preservation, environmental design, environmental psychology, etc.

COMMUNITY RESOURCE PEOPLE:

CONNECTICUT
STAMFORD
John C. Nerreau
Belltown School
21 Burdick St.
Stamford, CT 06905

Art Coordinator K-12

Actively involved in EE for twenty-seven years. Has worked with architects in residence program and piloting a grade 3 EE program.

Has trained teachers in aesthetic education.

Can advise on projects and administration implementation.

MAINE
BATH
Kenneth Grant
Hyde School
Bath, ME 04530

Assistant Headmaster

Directs an EE program which serves as a laboratory in kindling new and different approaches to wilderness, environmental and conservation education.

Can offer the benefits of his experience; limited resource file in environmental education and natural history, possible equipment rental.

MASSACHUSETTS
BARRE
William Gould
Quabbin Regional High School
Barre, MA 01005

Environmental Science Teacher

Teaches environmental studies in conservation which include emphasis on solar energy in design, cogeneration, underground housing, landscaping community planning, and land use.

Some curriculum written.

NEW HAMPSHIRE
CONCORD
Ron King
4 Bicentennial Square
Concord, NH 03301

Architect-in-Residence working with two teachers (4–6 grades) to develop workable curriculum augmenting classroom goals.

RHODE ISLAND
WARWICK
Gary Mazzie
Johnston High School
58 Acorn Lane
West Warwick, RI 02893

Ecology Teacher

Ecology program centers on use of nature trail (15 acres) which involves both natural and built environment.

Has a general secondary school resources/materials and complete ecology curriculum.

New Jersey

AIA REGIONAL CONTACT:

Paul Gallis
The Grad Partnership
Gateway One
Newark, NJ 07102
(201) 621-1700

AIA Public Education Committee

STATE EE COORDINATOR:

Bill Curzie
State Department of Education
P.O. Box 2019
222 West State St.
Trenton, NJ 08625
(609) 284-7300

Provides program dissemination services; distributes a monthly EE newsletter to teachers.

AIA RESOURCE PEOPLE AND PROGRAMS:

WOODBRIDGE
Helen T. Schneider, Hon. AIA,
Executive Director
New Jersey Society of Architects
1000 Rte. Nine
Woodbridge, NJ 07095

PRINCETON
Martin Beck, FAIA
32 Westcott Road
Princeton, NJ 08540

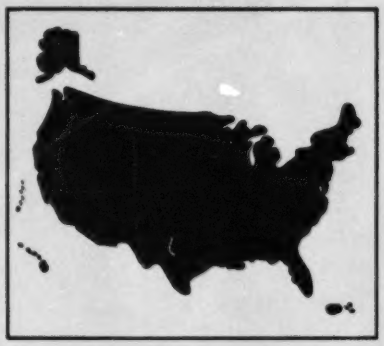
LOCAL/REGIONAL RESOURCE CENTERS:

BRANCHVILLE
Dr. John J. Kirk, Director
New Jersey School of Conservation
Montclair State College
Box 272
Branchville, NJ 07826

Residential EE field center which deals with four curriculum areas: humanities, social studies, outdoor pursuits, and natural and physical sciences.

Serves over 11,000 teachers and students throughout NJ annually.

New York



AIA REGIONAL CONTACT:

N. Jerry Maltz, AIA
59 E. Third St.
New York, NY 10003
(212) 777-5131

AIA Public Education Committee

STATE EE COORDINATOR:

Barry Jamason
State Department of Education
Rm 314H
Albany, NY 12234
(518) 474-5890

AIA RESOURCE PEOPLE AND PROGRAMS:

ALBANY
Barbara J. Rodriguez, Executive Director
New York State Association of Architects
13 Northern Blvd.
Albany, NY 12210

RYE
Allan Anderson, AIA
Mead Pond Lane
Rye, NY 10580

SYRACUSE
Gary B. Bell, AIA
Central New York Chapter
404 Oak St.
Syracuse, NY 13203

Chapter very interested in EE; main focus has been on program with Boy Scouts involving forty to fifty kids a year for past twelve years.

LOCAL/REGIONAL RESOURCE CENTERS:

CENTERPORT
Donald Busch, Director
Entayant Institute
Box 120
Centerport, NY 11721

Runs workshops on humanizing architecture and designing own environment.

Trains over 2,000 participants annually at residential Adirondack retreat.

NEW YORK CITY
Nancy Wolf, Executive Director
Environmental Action Coalition
156 Fifth Ave., Suite 1130
New York, NY 10010

Very involved in EE.

Publishes *Eco-News* and develops materials, e.g. energy curriculum.

Has built a model brownstone to demonstrate wise energy use and conservation.

Roberta Paine, Museum Educator
Junior Museum of the Metropolitan Museum of Art
Fifth Ave. at 82nd St.
New York, NY 10028

Maintains a junior museum library which includes references on architecture and architectural history for young people.

School programs (5–12 grades) on human society/culture of ancient, medieval, renaissance periods as well as cultures of Asia.

The American Institute of Architects
The Sourcebook

TROY
Jane Van Gelder, Program Coordinator
Built Environment Resource Center
Rensselaer County Council for the Arts
189 Second St.
Troy, NY 12180

Provides books and publications, exhibits and activity kits (a Cityscape Series), lesson guides, teaching materials and slides.

Links architects with schools, runs workshops.

Cooperates with Rensselaer County Junior Museum and its Mobile Exhibits program.

Serves schools, community groups, and other interested organizations in the Rensselaer County area.

Beverly Clark, Director Mobile Exhibits for Museum (282 Fifth Ave., Troy 12082)

YORKTOWN HEIGHTS
Dr. Frank Thompson, Director
ETI-ECOS
P.O. Box 309
Yorktown Heights, NY 10598

ETI-ECOS is one of the EE programs validated for distribution through the National Diffusion Network.

North Central States

AIA REGIONAL CONTACT:

James I. Lammers, AIA
Hills, Gilbertson Architects
6311 Wayzata Blvd.
Minneapolis, MN 55416
(612) 545-5678

AIA Public Education Committee

STATE EE COORDINATORS:

MINNESOTA
ST. PAUL
John Miller
State Department of Education
644 Capitol Square Bldg.
St. Paul, MN 55101
(612) 296-4069

Supports very active EE efforts in state, the majority of which incorporates both natural and man-made environmental issues.

A regional workshop on the urban environment w/curriculum from Metro Regional Coordinator for EE Council is conducted.

NORTH DAKOTA
BISMARCK
George Fors
Department of Public Instruction
State Capitol
Bismarck, ND 58505
(701) 224-2275

Responds to requests for information.

A high school course is offered in Ecology, focusing on environmental science.

SOUTH DAKOTA
PIERRE
Jim Hauck
State Department of Education
and Cultural Affairs
Kneip Bldg.
Pierre, SD 57501
(605) 773-3655

Offers workshops in EE on request.

Energy education current focus.

WISCONSIN
MADISON
David Engleson
Department of Public Instruction
125 South Webster St.
Madison, WI 53702
(608) 267-9266

Wisconsin Association for EE, Inc., a statewide organization promoting EE in state and the nation.

Has a newsletter (5 issues yr.); annual fall meeting; WISC sponsor for Project Learning Tree; conducts numerous workshops and seminars.

AIA RESOURCE PEOPLE AND PROGRAMS:

MINNESOTA
MINNEAPOLIS
James P. Cramer, Executive Director
Minnesota Society of Architects
314 Clifton Ave.
Minneapolis, MN 55403

Has a part-time staff director of Public Education; offers workshops for teachers and architects; tours for the public; presents and runs a booth at MN EE Association annually and sponsors other activities.

NORTH DAKOTA
FARGO
Odin Dahl, AIA, Executive Secretary
North Dakota Chapter AIA
Box 1403
Fargo, ND 58107

Participates in Architects-in-Schools program and provides financial support.

In process of planning to publish EE materials.

SOUTH DAKOTA
SIOUX FALLS
Art Henrickson, Executive Director
South Dakota Society of Architects
2204 S. Holly Ave.
Sioux Falls, SD 57105

Supports Architects-in-Schools program in Sioux Falls.

WISCONSIN
MADISON
Eric Englund, Executive Director
Wisconsin Society of Architects
615 E. Washington Ave.
Madison, WI 53703

Supports Architects-in-Schools program.

LOCAL/REGIONAL RESOURCE CENTERS:

MINNESOTA
MILACA
Abby S. Marier, Director
Alternative Sources of Energy, Inc.
107 S. Central Ave.
Milaca, MN 56353

A non-profit organization specializing in information dissemination regarding new developments in alternative energy and renewable resource technologies.

Available materials include *Alternative Sources of Energy* magazine (6 issues yr/$16.50), energy information and referral service; conferences, lectures, seminars, and courses. National distribution (6,700 readers).

MINNEAPOLIS
Dewey Thorbeck, Director
Interdesign, Inc.
1409 Willow St.
Minneapolis, MN 55403

Interdisciplinary design firm, specializing in architectural design, landscape architecture, site development, city planning and urban design.

SOUTH DAKOTA
BROOKINGS
Charles Gritzner, Executive Director
National Council of
Geographic Education
Department of Geography
South Dakota State University
Brookings, SD 57007

Several publications available on urban environments; forthcoming book *Our Vanishing Heritage: Studying Material Folk Culture.*

Dr. Henry Gehrke, Professor of Chemistry
Department of Chemistry
South Dakota State University
Brookings, SD 57007

Teaches EE and energy education from a technical and societal point of view.

WISCONSIN
MADISON
Robert Buchanan
Environmental Awareness Center
School of Natural Resources
College of Agricultural and
Life Sciences
University of Wisconsin
B-105 Steenbock
Madison, WI 53706

Has developed and evaluated new environmental design curriculum for 6–8 graders to examine natural and human systems patterns in their community regarding urban sprawl, to design workable options, consider controls, regional growth strategies, and planning ethics.

Wes Halverston
Water Resources Center
University of Wisconsin
1975 Willow Dr.
Madison, WI 53706

Has produced two curriculum guides in EE with holistic approach to total environment.

COMMUNITY RESOURCE PEOPLE:

MINNESOTA
MINNETONKA
Dale Karels
Minnetonka Built Environment
Multidisciplinary Project
17000 Lake Street Extension
Minnetonka, MN 55343

Project Director

A comprehensive approach to junior and senior high curriculum about the built environment has been developed on a Title IV grant. Twenty units and a semester course available on such topics as energy, transportation, and structures.

(See Model Program description)

RED WING
Bev Anderson
R 2
Red Wing, MN 55066

Consultant with seven school districts for gifted children (K–12).

Has been involved in EE for six years and has worked with architects in the classroom and is familiar with resources in EE, especially regarding built environment.

WISCONSIN
MENASHA
Dean Sauers
Menasha High School
Seventh St.
Menasha, MI 54952

Teaches EE, economics and state history (10–12 grades).

Very familiar with state and national programs and materials in EE.

MILWAUKEE
Allan Hida
Madison High School
8135 West Florist Ave.
Milwaukee, WI 53218

Science teacher (9–12)

Involved in an energy and environment program for the high schools in Milwaukee. Madison High has special courses also in environmental science, energy, cartography, marine science, atmospheric science, etc.

Descriptive brochure of program available.

WEST BEND
Mary Forston
1412 Sandra Lane
West Bend, WI 53095

Science and EE teacher for grade 6.

The Sourcebook The American Institute of Architects

Northwest

AIA REGIONAL CONTACT:

Marjorie Wintermute, FAIA
2892 NW Upshur
Portland, OR 97210
(503) 221-1017
(503) 292-3777

AIA Public Education Committee

STATE EE COORDINATORS:

ALASKA
JUNEAU
Ray Cox
State Department of Education
Pouch F
Juneau, AK 99811
(907) 465-2841

Unofficial coordinator, can provide references and referrals.

HAWAII
HONOLULU
Judith Pool
State Department of Education
P.O. Box 2360
Honolulu, HI 96804
(808) 548-5914

EE legislation passed in 1974, elementary programs present total environment; secondary programs offer EE in both sciences and social sciences.

Offers workshops, materials, audio-visual materials, and references.

IDAHO
BOISE
Karen Underwood
State Department of Education
Len B. Jordan Bldg.
650 W. State
Boise, ID 83720
(208) 384-2114

Responds to requests and makes referrals.

MONTANA
HELENA
Edward Eschler
Office of Public Instruction
State Capitol Bldg.
Helena, MT 59601
(406) 449-2543

Provides workshops, supplemental material, instructional procedures, and curriculum consultation.

OREGON
SALEM
Claudia McDuffie
State Department of Education
Salem, OR 97310
(503) 378-4326

Provides workshops, training, conferences, materials and guidance.

Architects-in-Schools active throughout state.

WASHINGTON
OLYMPIA
David Kennedy
State Department of Education
Office of State Superintendent
Old Capitol Bldg.
Olympia, WA 98504
(206) 753-2574

Offers program development and dissemination of science and EE materials.

Has a full range of program materials and services for operation of science and EE programs.

AIA RESOURCE PEOPLE AND PROGRAMS:

ALASKA
ANCHORAGE
Edwin B. Crittenden, FAIA
431 West Seventh Ave.
Suite 100
Anchorage, AK 99501

AIA Commissioner

Leo D. McGlothlin, AIA, President
Alaska Chapter
Inlet Architects, Inc.
943 W. Sixth Ave., Suite 200
Anchorage, AK 99501

GUAM and MICRONESIA
TAMUNING
Jack B. Jones, AIA, President
Guam and Micronesia Chapter
J. B. Jones AIA
Box 6277
Tamuning, GU 96911

HAWAII
HONOLULU
Frank S. Haines, FAIA, Chairman
Architects Hawaii Ltd.
Suite 300
Pacific Trade Center
190 South King St.
Honolulu, HI 96813

AIA Public Education Committee

IDAHO
BOISE
Jackie Fuller, Executive Secretary
Idaho Chapter
842 La Cassia Dr.
Boise, ID 83705

MONTANA
BUTTE
Walter H. Hinick, AIA, President
Montana Chapter
W. H. Hinick Architects
100 E. Broadway
Butte, MT 59701

OREGON
SALEM
Hank Crawford, Executive Director
Oregon Council of Architects
350 Mission St.
P.O. Box 455
Salem, OR 97308

WASHINGTON
SEATTLE
Dorothy Johnston, Executive Director
Seattle Chapter
311½ Occidental South
Seattle, WA 98104

LOCAL/REGIONAL RESOURCE CENTERS:

IDAHO
POCATELLO
Henry J. Hulvey, Assoc. Professor
Idaho State University
Department of Architecture
Pocatello, ID 83201

Speaks at group meetings regarding the built environment and solar energy.

MONTANA
MISSOULA
Dr. Donald F. Darling
University of Montana
College of Education
Missoula, MT 59812

Environmental Education Coordinator

Provides basic information and material.

Teaches and facilitates teacher involvement in building or adapting to facilities.

Assists in the actual building of facilities—buildings (new and remodeled) and outdoor facilities.

WASHINGTON
BELLINGHAM
John Miles, Professor
Western Washington University
Huxley College
Bellingham, WA 98225

Provides occasional workshops on specific topics such as solar design, the planning process.

COMMUNITY RESOURCE PEOPLE:

ALASKA
ANCHORAGE
Larry Klawunder
Service High School
5677 Abbot Rd.
Anchorage, AK 99507

Science teacher grades 7–12. Incorporates energy education and EE into his teaching.

FAIRBANKS
Dr. Dolores Dinneen
Box 1250
Fairbanks, AK 99707

Has worked with Fairbanks AIA component in school programs.

HAWAII
HONOLULU
Lorraine Tokuyama
Mefferson Elementary School
324 Kapahulu Ave.
Honolulu, HI 96815

Teaches handicapped children and has worked in outdoor EE and conservation education.

IDAHO
BOISE
Coleen Little Armitage
2905 N. Fry
Boise, ID 83704

Teaches K–12, English, Social Studies, Science.

Developed a K–6 curriculum guide in energy and environmental conservation; as part of a pilot humanities unit (6th grade) she focused on "Resourceful Architecture," visiting contemporary homes in the area.

SHOSHONE
Begie Hatmaker
Box 344
Shoshone, ID 83352

5th Grade teacher

Directs an interdisciplinary curriculum that includes classroom activities, local environmental study area, and overnight camping trips.

Has a tape and slide program on environmental activities used for her various presentations.

MONTANA
BILLINGS
Deborah L. Richau
101 10th St. W.
Billings School Dist. #2
Billings, MT 59102

EE teacher familiar with many programs and resources.

GREAT FALLS
Cal Ryder
Great Falls Public Schools
1100 4th St. So., Box 2428
Great Falls, MT 59403

Environmental Ed. Coordinator

Has comprehensive EE program for grades 1–12; is familiar with literature and educational materials.

LOLO
Dee Otero
Lolo Elementary School
Box 8
Lolo, MT 59847

Elementary science/language arts teacher

Involved with the "L.O.L.O. Project" which makes seasonal comparisons of forest and stream communities, includes an activity guide and student book.

Very familiar with a variety of EE materials and programs.

The Sourcebook The American Institute of Architects

OREGON

EUGENE

Dana Mafit
ACTION High School
650 W. 12th Ave.
Eugene, OR 97402

Part of Southern Willamette Energy Action team which promotes energy education in the area service district.

Offers workshops concerning different programs, energy topics, materials, etc.

Joe Garrison
Winston Churchill High School
1850 Bailey Hill Rd.
Eugene, OR 97401

Industrial Arts and Art teacher (10-12 grades)

Involved in EE for over 10 years.

Has "Solar Energy Research" and "Solar Energy: Alternative Energy" projects available developed by himself and his students.

WASHINGTON

BELLEVIEW

David Faith
Belleview School District
310 102nd Avenue NE
Belleview, WA 98004

EE teacher in district schools.

Was project director for Project U.S.E.-Urban Suburban EE program for intermediate grades includes curriculum, field trips and concepts.

PORT ORCHARD

Larry Hill
East Port Orchard Elementary
1964 Hoover Avenue SE
Port Orchard, WA 98366

Works with EME program with elementary school students.

The American Institute of Architects
The Sourcebook

Ohio

AIA REGIONAL CONTACT:

Neal Layne, AIA
Executive Vice President
Architects Society of Ohio
37 W. Broad St., Suite 301
Columbus, OH 43215
(614) 221-6887

STATE EE COORDINATOR:

John Hug
EE Coordinator
Office of Education
State Department of Education
65 South Front St. RM 801
Columbus, OH 43215
(641) 466-5015

AIA RESOURCE PEOPLE AND PROGRAMS:

CLEVELAND
Rose Marie C. Dostal
Executive Secretary
Cleveland Chapter
401 Euclid Ave.
210 The Arcade
Cleveland, OH 44114

DAYTON
A. Notley Alford, AIA
Lorenz and Williams, Inc.
120 W. Third St.
Dayton, OH 45402

Involved in Dayton Architects-in-Schools program run by area architects who visit elementary schools.

Locally developed program materials and books, aids, etc., from various sources are used.

Serves the Dayton area.

EDUCATIONAL ORGANIZATIONS:

DAYTON
James La Plant, Program Associate
Institute for Development
of Education Activities
5335 Far Hills Ave.
Dayton, OH 45429

LOCAL/REGIONAL RESOURCE CENTERS:

CLEVELAND HEIGHTS
Joe Chadbourne, President
Institute for Environmental Education
2803 Scarborough Rd.
Cleveland Heights, OH 44106

Provides consultation services, referrals, workshops, library resources, and materials development.

Serves local and state agencies, school districts, teachers, and national EE organizations.

COMMUNITY RESOURCE PEOPLE:

MAUMEE
Roger Braker
340 Lacombe
Maumee, OH 43527

Familiar with EE resource materials and particularly with those relating to the built environment.

The American Institute of Architects
The Sourcebook

Pennsylvania

AIA REGIONAL CONTACT:

Hermine Mitchell
850 Andorra Rd.
Lafayette Hill, PA 19444
(215) 233-4151

AIA Public Education Committee

STATE EE COORDINATOR:

Robert Schwille
EE Coordinator
State Department of Education
Bureau of Curriculum Services
Box 911
Harrisburg, PA 17126
(717) 783-3958

First state to accredit EE specialists; eleven colleges provide EE training.

State EE text available.

AIA RESOURCE PEOPLE AND PROGRAMS:

DOYLESTOWN
Edward Dardzinski, AIA
Bucks County Chapter
112 Mary St.
Doylestown, PA 18901

Conducts youth education programs offering services in career development and elementary school presentations.

HARRISBURG
Lela Shultz, Executive Director
Pennsylvania Society of Architects
P.O. Box N
212 Locust St.
Harrisburg, PA 17108

PHILADELPHIA
Leslie Gallery, AIA, Executive Director
Philadelphia Chapter
117 South 17th St.
Philadelphia, PA 19103

LOCAL/REGIONAL RESOURCE CENTERS:

BLUE BELL
Mathew M. Hickey, Director
Alan D. Sexton, Assistant Director
Project KARE
Montgomery Ave. and Paper Mill Rd.
Erdenheim, PA 19118

Provides EE materials, workshops, training, consultant services, resource library. (See Model Program description.)

Programs available through National Diffusion Network, as nationally validated EE Program.

DINGMAN'S FERRY
Jack Paladino, Director
Pocono Environmental
Education Center (PEEC)
RD #1 Box 268
Dingman's Ferry, PA 18238

Regional residential EE center offers a variety of EE programs for schools and teacher training workshops.

Sites include nature trails, biology field center, studios, and work areas, as well as recreational facilities and fifty-two cabins.

MILLERSVILLE
John Horst, Director
Regional Environmental Library
Millersville State College
Millersville, PA 17551

PHILADELPHIA
Dr. Aase Eriksen, Director
Built Environment Education Center
Educational Futures, Inc.
2118 Spruce St.
Philadelphia, PA 19103

Offers consultant services and maintains library.

Publishes newsletter, *Built Environmental Education*, and has several EE resource materials available.

Local and national constituency includes architects and teachers associated with the National Endowment for the Arts' Architects-in-Schools program.

The American Institute of Architects
The Sourcebook

PHILADELPHIA
Richard James, Director
Schuylkill Valley Nature Center
Hagy's Mill Rd.
Philadelphia, PA 19118

Offers EE programs (local and regional), exhibits, nature trails, workshops and conferences, library, and bookstore.

QUAKERTOWN
John T. Hershey, Co-Director
Kirk Emerson Hershey, Co-Director
Environmental Group Research Institute, Inc.
Box 185, RD 3
Quakertown, PA 18951

Offers program planning, training and evaluation services.

Networks people, resources, and materials.

Conducts educational research in environment, energy and appropriate technology.

SANDY LAKE
Dr. Richard Touvell, Director
McKeaver Environmental Learning Center
Box 121, RD #3
Sandy Lake, PA 16145

Residential EE center.

Offers many EE programs throughout the year to teachers and students in the region.

SHIPPENSBURG
Dr. Lloyd Trinklein, Director EE
Shippensburg State College
Shippensburg, PA 17257

Teacher training.

EE teaching resources and references available through computer-assisted search program.

COMMUNITY RESOURCE PEOPLE:

ALLENTOWN
Bill Ayers
Allentown School District
31 So. Penn St.
Allentown, PA 18105

Science Curriculum Coordinator, trained in OBIS at PEEC and familiar with many EE programs and materials.

FORT WASHINGTON
Alan Moeser
Germantown Academy
P.O. Box 287
Fort Washington, PA 19034

Art teacher who has worked with his elementary school children in large geometry constructions, inner space capsules, and environmental art.

MEDIA
Dave Woods
Roosevelt School
464 So. Old Middletown Rd.
Media, PA 19063

Fifth grade teacher involved in district environmental science unit; trained in PLT and familiar with EE resources.

PHILADELPHIA
Sister Thomas Emmanuela
St. Philip Neri School
916 E. Moyamensing Ave.
Philadelphia, PA 19147

Fifth and sixth grade teacher involved in EE for eight years.

Leila Finkelstein
Ellwood School
13th St. and Oak Lane
Philadelphia, PA 19126

Works with gifted elementary school children and has been involved with EE for seven years.

Richard McCoy
Bartram Senior High School
67th and Elmwood Ave.
Philadelphia, PA 19142

Biology teacher in Senior High who has been involved with EE for six years.

The Sourcebook The American Institute of Architects

South Atlantic States

AIA REGIONAL CONTACT:

Frank A. DePasquale, AIA
DePasquale Markham Thompson Wilson
Architects and Planners, Ltd.
P.O. Box 3636
Durham, NC 27702
(919) 688-8102

AIA Public Education Committee

STATE EE COORDINATORS:

GEORGIA
ATLANTA
Dallas Stewart
State Department of Education
207 Education Annex
156 Trinity Ave. SW
Atlanta, GA 30303
(404) 656-2576

NORTH CAROLINA
RALEIGH
Clinton Brown
State Department of Public Instruction
RM 284, Education Bldg.
Raleigh, NC 27611
(919) 733-3694

SOUTH CAROLINA
COLUMBIA
Alice Linder
State Department of Education
803 Rutledge Bldg.
Columbia, SC 29201
(803) 758-2652

Very active support of EE throughout the state.

EE source book available, in-service training, etc.

AIA RESOURCE PEOPLE AND PROGRAMS:

GEORGIA
ATLANTA
Dorothy P. Spence, Executive Director
GA Association of Architects
Lobby Cain Tower
229 Peachtree St. NE
Atlanta, GA 30303

Bookstore, Atlanta tour service, and film, "Atlanta, I Love You, I Hate You."

AUGUSTA
Nicholas Dickinson, AIA
Augusta Chapter
699 Broad St.
Augusta, GA 30902

SAVANNAH
Walton Bazemore, AIA, President
South Georgia Chapter
7 Drayton St.
Savannah, Ga 31402

NORTH CAROLINA
RALEIGH
Betty Silver, Hon. AIA, Executive Director
North Carolina Chapter
115 W. Morgan St.
Raleigh, NC 27601

SOUTH CAROLINA
CHARLESTON
W. Daniel Beaman, AIA, President
South Carolina Chapter
P.O. Box 912
Charleston, SC 29402

COLUMBIA
Doris L. Bullard, Executive Secretary
South Carolina Chapter
1522 Richland St.
Columbia, SC 29201

LOCAL/REGIONAL RESOURCE CENTERS:

GEORGIA
ATLANTA
Dale A. Durfee, AIA
College of Architecture
Georgia Institute of Technology
Atlanta, GA 30332

Professor of Architecture
Interested in EE

ATHENS
Robert Saveland
School of Environmental Design
University of Georgia
203 Dudley Hall
Athens, GA 30602

The American Institute of Architects
The Sourcebook

SAVANNAH
Charles E. Milmine, Director
Savannah Science Museum
4405 Paulsen St.
Savannah, GA 31405

Education and research in energy efficient buildings both new and renovated with emphasis on solar cooling; courses on home building (part of SEED School—Southern Energy Efficient Dwelling School). Urban ecology programs.

Demonstration solar heating, cooling and hot water project; exhibits on energy and buildings; and energy resource library maintained.

Serves coastal Georgia and southern coast of South Carolina (pop. 250,000).

NORTH CAROLINA
DURHAM
Dr. William M. Sudduth, Executive Director
North Carolina Museum of Life and Science
433 Murray Ave.
P.O. Box 15190
Durham, NC 27704

Conducts activities concerned with architectural techniques, walking tours and exhibits.

Offers museum resources in science and technology.

COMMUNITY RESOURCE PEOPLE:

GEORGIA
WAYCROSS
Don Berryhill
Okefenokee CESA
Rt 5, P.O. Box 406
Waycross, GA 31501

K–12 science teacher familiar with many regional and national EE and outdoor education programs and materials.

NORTH CAROLINA
ASHEVILLE
Dr. Larry Liggett
Principal Asheville High School
419 McDowell St.
Asheville, NC 28803

Involved in EE for five years familiar with commercial and locally developed materials.

SOUTH CAROLINA
CLOVER
Pat Francis
Clover City Schools
Environmental Ed. Project
Clover, SC 29701

EE curriculum specialist K–12, particularly familiar with audiovisual resources and kits and games in EE.

COLUMBIA
Jim Prater
Community Education
Hand Middle School
2600 Wheat St.
Columbia, SC 29205

Has worked with architects in residence and is experienced in practical hands-on design activities and construction projects.

Marlene Shade
Eau Claire High School
4800 Monticello Rd.
Columbia SC 29203

High school teacher involved with Architects-in-Schools program, has developed her own teaching materials about the built environment.

The Sourcebook The American Institute of Architects

Texas

AIA REGIONAL CONTACT:

W. Lawrence Garvin, AIA
Assoc. Dean and Chairman
Division of Architecture
Texas Tech University
Lubbock, TX 79409
(806) 742-3138

AIA Public Education Committee

STATE EE COORDINATOR:

Joseph Huckstein
EE Coordinator
Texas Education Agency
Division of Curriculum Improvement
201 East 11th St.
Austin, TX 78701
(512) 475-3653

Program and materials dissemination.

Recently developed K-12 energy curriculum modules.

High school environmental science course focuses on ecology and energy.

AIA RESOURCE PEOPLE AND PROGRAMS:

AUSTIN
Des Taylor, Executive Director
Texas Society of Architects
2121 Austin National Bank Tower
Austin, TX 78701

DALLAS
James R. Pratt, FAIA
P.O. Box 19647
Dallas, TX 75219

AIA Public Education Committee

HOUSTON
Bruce Webb
4362 Fiesta Lane
Houston, TX 77004

AIA Public Education Committee

MIDLAND
Frank Welch, FAIA, President
West Texas Chapter
P.O. Box 1454
Midland, TX 79702

SAN ANTONIO
Richard R. Tangum, AIA
434 Oak Leaf Dr.
San Antonio, TX 78209

AIA Public Education Committee

EDUCATIONAL ORGANIZATIONS:

STATEWIDE
Rusty Hollinsworth, President
Texas Association for
Environmental Education
828 Haywood Rd.
Hurst, TX 76053

KILGORE
Michael Owens, EE Consultant
Region VII Education Service Center
P.O. Box 1622
Kilgore, TX 75662

Offers assistance in nature study areas and trails, activities to do outdoors, mathematics and science in the environment.

Materials and services available from National Diffusion Network.

Serves seventeen counties in East Texas, 6,000 teachers and 124,000 students.

The American Institute of Architects
The Sourcebook

LOCAL/REGIONAL RESOURCE CENTERS:

BEAUMONT
Janet Krulick, Curator of Education
Beaumont Art Museum
1111 Ninth St.
Beaumont, TX 77702

In conjunction with the Beaumont Heritage Society and local school system a seventh grade art and history program is offered—*Beaumont, U.S.A. Our Built Environment.*

DALLAS
Carol S. Weber
Dallas County Heritage Society
Old City Park
1717 Gano
Dallas, TX 75215

Offers architectural tours of local nineteenth century buildings for 7–12 grades. Provides information on architecture, restoration and preservation.

WACO
Mrs. George J. Moen, Director
Youth Cultural Center
815 Columbus
Waco, TX 76703

A learning center sponsored by school district.

Programs and exhibits on nature and cultural heritage.

COMMUNITY RESOURCE PEOPLE:

HOUSTON
Courtney C. Parks
2310 Berry Rd.
Houston, TX 77052

Elementary principal who administers an EE program that involves three full time teachers and one teacher's aid working with teachers and all students.

MARSHALL
Wendell E. Jones
1003 N. Grove
Marshall, TX 75670

Directs an EE program on a five year plan where district schools plan and implement environmental projects every other year.

5–12 grades involved; 100-item environmental test has been designed to assess achievements in both cognitive and affective domains.

Program reaches approximately 3,500 students.

WEIMAR
Jeff Carroll
P.O. Box 247
Weimar, TX 78962

EE consultant.

Past coordinator of EE programs for U.S. Forest Service.

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Western Mountain States

AIA REGIONAL CONTACT:

Glenn Lloyd, AIA
511 E. Third St. So.
Salt Lake City, UT 84102
(801) 328-3245

AIA Public Education Committee

STATE EE COORDINATORS:

ARIZONA
PHOENIX
Tilman Turley
State Department of Education
1535 West Jefferson
Phoenix, AZ 85007
(602) 255-4709

Offers support, referrals, and references in EE.

Arizona EE Handbook—K-12 guide dealing with total environment available.

COLORADO
DENVER
George Ek
State Department of Education
State Office Bldg.
201 East Colfax
Denver, CO 80203
(303) 839-2419

Offers consultation and materials reference.

High School Geography course available.

NEVADA
CARSON CITY
Jack O'Leary
State Department of Education
Capitol Complex
400 West King St.
Carson City, NV 89710
(702) 885-5700

EE legislation adopted in 1971. Offers in-service training workshops, referrals, materials, references and consultation.

NEW MEXICO
SANTA FE
B. K. Graham
State Department of Education
State Education Bldg.
Santa Fe, NM 87503
(505) 827-5391

Offers workshops and responds to requests for materials.

EE mandated to be integrated into school curricula; present emphasis on outdoor education.

UTAH
SALT LAKE CITY
Richard Peterson
State Board of Education
250 East 5th So.
Salt Lake City, UT 84111
(801) 533-5061

Offers in-service training, primarily in natural sciences.

WYOMING
CHEYENNE
William Futrell
Department of Education
221 Hathaway Bldg.
Cheyenne, WY 82002
(307) 777-7411

Provides inservice training and support regarding materials and guidance in EE.

AIA RESOURCE PEOPLE AND PROGRAMS:

ARIZONA
PHOENIX
Mary Chapman Smith, Hon. AIA, Executive Director
AZ Society of Architects
1121 N. Second St.
Phoenix, AZ 85062

COLORADO
DENVER
Trudy McDermott, Executive Director
Colorado Society of Architects
1420 Larimer, Suite 201
Denver, CO 80202

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NEVADA
LAS VEGAS
Harry E. Campbell, AIA, President-Elect
Nevada Society of Architects
1515 E. Tropicana Ave.
Las Vegas, NV 89109

NEW MEXICO
SANTA FE
Robert Strader Jr., AIA, President
New Mexico Society of Architects
P.O. Box 2144
Santa Fe, NM 87501

WYOMING
CODY
Fred Hynek, AIA, President
Wyoming Chapter
The Design Group
1725 Sheridan Ave.
Cody, WY 82414

Conducts seminars for solar design for public and architects go to schools and speak to students.

LOCAL/REGIONAL RESOURCE CENTERS:

COLORADO
COLORADO SPRINGS
John Thompson, Colorado Coordinator
Energy and Man's Environment (EME)
2417 Warwick Lane
Colorado Springs, CO 80909

A nonprofit energy education organization that provides in-service training for educators and energy education materials.

Offers lessons, activities, glossary, bibliography on energy education for teachers (K–12). Also developed conceptual framework on energy.

Curently being used in fifteen states.

DENVER
Association for Experiential Education (AEE)
Box 4625
Denver, CO 80204

EE Special Interest Group works to develop networking system for sharing personal/professional information.

Annual conference, *Journal of Experiential Education*, Newsletter, consultant network listings, publications, jobs clearing house.

WYOMING
LARAMIE
Dr. Duane Keown, Professor
College of Education
University of Wyoming
Laramie, WY 82071

Teaches Biology, EE, Science, teaching methods at college and junior high level.

Has been involved in EE for over ten years.

COMMUNITY RESOURCE PEOPLE:

ARIZONA
PHOENIX
Tom Kreusel
Moon Mountain School
13425 North 19th Ave.
Phoenix, AZ 85029

6th Grade Social Studies teacher involved in EE for eight years. Familiar with many state and national EE programs and materials.

COLORADO
LITTLETON
Helen Davis
5895 So. University
Arapahoe County District Six
Littleton, CO 80121

Coordinator of instruction for county, is familiar with state and national EE programs, has worked with South Suburban and the City of Littleton on local park project.

NEVADA
FALLON
Georgeen Huber
West End Elementary School
280 South Russell
Fallon, NV 89406

4th Grade teacher involved in EE for seven years, has participated in EE training workshops.

LAS VEGAS
Paul Iverson
Clark County Schools
2832 E. Famingo Rd.
Las Vegas, NV 89121

Science Coordinator, familiar with several EE programs.

NEW MEXICO
ALBUQUERQUE
John Cox
Albuquerque P. Schools
P.O. Box 25704
Albuquerque, NM 87125

Director of Environmental Education Center, provides short in-service workshops, K–12 instructional resource guide, university course for graduate credit.

Teacher specialists staff at EE center, mobile exhibits for energy education, community agencies and groups, provide classroom lectures and demonstrations, films.

Anne Taylor
Institute for Environmental Education
University of New Mexico
2414 Central S.E.
Albuquerque, NM 87106

Allen Templeton
West Mesa High School
Albuquerque, NM 87105

Life science teacher (10–12 grades) conducts EE workshops for teachers and agency personnel, familiar with local, state, and national EE resources.

LAS CRUCES
Luann Sisson
1727 Royal
Las Cruces, NM 88001

6th Grade science teacher runs EE summer camp for district (5th graders and 11th graders visit for one week sessions) teachers trained in federal and other national EE programs (e.g. OBIS, Forest Service).

SANTA FE
Mary Louise Williams
Rte. 5 Box 229A
Sante Fe, NM 87501

Long-time environment activist, teacher.

Over past ten years has developed a traveling EE dramatic presentation, S.T.A.T.E.—Student Traveling Awareness Team for the Environment.

UTAH

AMERICAN FORK

Lyle Tregaskis
Alpine School District
50 North Centre St.
American Fork, UT 84003

Has brought local resource people (geography, geology, local history, etc.) into the classroom; worked on a special section with a local architect on the changing of homes from pioneer times to the present.

OGDEN

Bruce Dursteler
Weber School District
1122 Washington Blvd.
Ogden, UT 84404

Involved in Swanson's North Fork Learning Center for K–12 students in all curriculum areas.

Elementary and secondary curriculum guides developed.

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National Education Organizations

ALLIANCE FOR ENVIRONMENTAL EDUCATION

1619 Massachusetts Ave. NW
Washington DC 20036

Charles E. Roth, President

The Alliance was organized in 1973 to join non-governmental organizations together to pursue their common goal to encourage the development, implementation, and coordination of effective EE programs and to communicate and explore cooperative ventures with other entities in the field; a brochure is available describing the resources and services of the thirty member organizations and conference proceedings are available through the ERIC/SMEAC system.

AMERICAN INDUSTRIAL ARTS ASSOCIATION

11110 Bridger Canyon Rd.
Bozeman, MT 59715

Dr. Douglas L. Polette
Chairman, EE Committee

Has developed hands-on activities for industrial arts classrooms to aid in the development of environmental education concepts K-12.

CENTER FOR ENVIRONMENTAL EDUCATION

1925 K Street NW
Suite 206
Washington, DC 20006

Thomas Grooms

A private, non-profit organization concerned with fostering environmental awareness; current focus is on marine ecosystems; three major projects underway—Whale Protection Fund, Seal Rescue Fund, and the Sea Turtle Rescue Fund, all to protect these animals from extinction and threats to their habitat; publishes two major reports—*EE Report* (monthly) and the *Whale Report* (quarterly); in addition, fact sheets, brochures, coloring books, and educational materials are developed and a resource library is being developed.

CONSERVATION EDUCATION ASSOCIATION

Office of Secretary-Treasurer
University of Wisconsin-Green Bay
Green Bay, WI 54302

Bob Darula, Secretary-Treasurer

An organization of representatives from school systems, conservation organizations, colleges and universities, business and industry, museums and nature centers and government agencies; founded to promote conservation/environmental education at all levels, encompassing all aspects of the natural and man-made world for a better understanding of the factors affecting the maintenance of a quality environment; offers conferences, publishes a newsletter and conference proceedings, instructional materials including slide tapes on outdoor classrooms, among other materials.

COUNCIL FOR ELEMENTARY SCIENCE INTERNATIONAL

1742 Connecticut Ave. NW
Washington, DC 20009

Ken Mechling

Publishes a teacher journal, *Science and Children* and other publications.

ERIC—CLEARINGHOUSE FOR SCIENCE, MATHEMATICS AND ENVIRONMENTAL EDUCATION

Room 310
1200 Chambers Road
Columbus, OH 43212

John F. Disinger
Associate Director

Part of a national information system located within the National Institute of Education, ERIC/SMEAC handles current information in the areas of science, math and environmental education; collecting, evaluating, abstracting, cataloging, and reproducing significant documents. ERIC/SMEAC produces materials and references and sells them (approximately 115 documents are currently available) in hard copy or microfiche. A key feature is its computer search capability.

NATIONAL ART EDUCATION ASSOCIATION

1916 Association Dr.
Reston, VA 22091

John J. Mahlmann

A membership organization which publishes a journal, *Art Education*.

NATIONAL ASSOCIATION OF ENVIRONMENTAL EDUCATION

Box 400
Troy, OH 45373

Joan Heidelberg, Director

A membership organization of college and university faculty and students, government employees, representatives from business and industry, labor, K-12 school teachers, curriculum coordinators and administrators, community leaders, journalists, environmental technicians and scientists, media producers, interpretive naturalists, librarians, and others interested in environmental education and the fostering of an environmentally literate society; convenes an annual conference; publishes a bimonthly newsletter and a report entitled *Current Issues*.

NATIONAL COUNCIL OF GEOGRAPHIC EDUCATION

South Dakota State University
Dept. of Geography
Brookings, SD 57007

Charles F. Gritzner
Executive Director

Produced several publications dealing with urban environments; forthcoming book on *Our Vanishing Heritage: Studying Material Folk Culture*.

NATIONAL DIFFUSION NETWORK DIVISION

Department of Education
Room 802
1832 M St. NW
Washington, DC 20036

Lee Wickline, Director

A Federal education program that makes available over 160 nationally validated projects to schools and school systems around the country; eight programs in environmental education include the following:

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Project CREATION: Concern Regarding the Environment and Technology in Our Nation/Neighborhood. (La Salle, IL)

Curriculum Modification Through Environmental Studies: Environmental Studies Center (Jensen Beach, FL)

Project ECOLOGY (Environmental Career-Oriented Learning) (Seattle, WA)

ECOS Training Institute (Yorktown Heights, NY)

Project I-C-E (Instruction-Curriculum-Environment) (Green Bay, WI)

ISIS: Individualized Science Instructional System Dissemination Project (Tallahassee, FL)

Project KARE (Knowledgeable Action to Restore Our Environment) (Erdenheim PA)

Pollution Control Education Center—Priority 1: *Environment* (Union, NJ)

National Environmental/Energy Associations

ALTERNATIVE SOURCES OF ENERGY
Rte. 2 Box 90 A
Milaca, MN 56353

Abby S. Marier

A nonprofit organization specializing in information dissemination on new developments in the field of alternative energy and renewable resource technologies. Publishes *Alternative Sources of Energy Magazine* (6 issues yr/$16.50) (6,700 readers) runs energy information and referral service; conducts lectures, seminars, courses.

CITIZENS ENERGY PROJECT
1110 6th St. NW
Washington, DC 20005

Jan Simpson

A nonprofit organization working on energy, appropriate technology, and opposition to nuclear energy; does outreach and advocacy work; distributes over 150 pamphlets and books; while supported through materials sales, teachers may copy and use any materials with permission.

ENVIRONMENTAL ACTION COALITION
156 5th Ave. Suite 1130
New York, NY 10010

Nancy Wolf, Executive Director

Long involved in designing environmental materials and programs for students in city and suburbs; publishes *ECO-News* and environmental newsletter for young people; has a teaching curriculum on energy conservation, "Less Power To The People"; has built a model brownstone house that demonstrates energy conscious design.

ENVIRONMENTAL ACTION FOUNDATION
724 Dupont Circle Bldg.
Washington, DC 20036

Claudia Comins
Director

Two major projects on utilities and waste and toxic substances; both projects function as national clearinghouses on electric utility/energy issues and solid/hazardous waste and toxic substances issues; provides information referral, fact sheets on selected topics, experts listings; *Power Line*—monthly news journal on utility issues; *Exposure*—monthly news journal on waste and toxics issues.

ENVIRONMENTAL DEFENSE FUND
475 Park Ave. So.
New York, NY 10016

Janet W. Brown

Performs scientific research and litigation on selected issues/cases in the above programs, with maintenance and promotion of environmental quality as prime motivation. Also uses economic analyses of different projects as important decision-making tools. Bi-monthly newsletter, the *EDF Letter* available, keeps members up to date on EDF activities; Annual Report also available. Additional offices in Washington, DC; Denver, CO; and Richmond, VA.

NATIONAL TRUST FOR HISTORIC PRESERVATION
1785 Massachusetts Ave. NW
Washington, DC 20036

Antoinette J. Lee

Has several publications available; *Funding Sources for Preservation, Preservation Education: K-12 Grade, Preservation Made Elementary, A Book Bibliography for Teachers and Their Children, A Teacher's Guide to Preservation-Related Materials.*

NATIONAL WILDLIFE FEDERATION
1412 16th St. NW
Washington, DC 20036

Curt Abdouch

Its Educational Division provides facilities and produces environmental education programs and materials for use by NWF members and the general public. Resources include National Wildlife Week activities, over 100 educational services publications, Conservation Directory, curriculum materials, The CLASS Project, conservation education centers, Backyard Wildlife Habitat program, Conservation Summits, Earth TREK, Ranger Rick Wildlife Camp, and Ranger Rick Nature Clubs.

National Professional Associations

AMERICAN GEOGRAPHICAL SOCIETY

Broadway at 156 St.
New York, NY 10032

Wendy G. Rogers

Produces print and audiovisual materials related to environmental concerns that may be used to educate students about the environment; catalogue of resources is available.

AMERICAN SOCIETY OF CIVIL ENGINEERS

345 E. 47th St.
New York, NY 10017

Dr. George K. Wadlin

Five education committees working with staff support; concerned mainly with curriculum accreditation, interchange with industry, students, engineering and technology, and all aspects of higher education; guidance brochures and audiovisual aids, accreditation visitors guidelines (5 areas), statistical surveys, coordination with all CE schools and administrators, and information source.

ASSOCIATION OF AMERICAN GEOGRAPHERS

1710 16th St. NW
Washington, DC 20009

Salvatore J. Natoli

Has a specialty group on environmental studies to support activities which facilitate communication among geographers interested in environmental issues, ranging from fundamental research and curriculum reform to aesthetics and ethics; to improve the quality of program efforts; to enhance the place of environmental studies within the discipline as well as the contributions of geographers to public and business policies on environmental problems; consultation and a number of publications available from the Commission on College Geography and from the Resource Paper Series of the AAG among which are *Man and Nature; Man and Environment; Perspectives on Environment; Land-Use Control; Interface of Law and Geography; Triumph or Triage; The World Food Problem in Geographical Perspective; Landscape in Literature; Visual Blight in America; Urbanization and Environmental Quality; Energy: The Ultimate Resource; Environmental Impact Statements; Water Resources for Our Cities.*

NATIONAL ASSOCIATION OF ENVIRONMENTAL PROFESSIONALS

P.O. Box 1223
Arlington, VA 22313

Charles Zirzow

No specific K-12 efforts; primarily interested in training professionals; has an educational guidance committee; potential cooperation in K-12 programs.

POPULATION REFERENCE BUREAU

1337 Connecticut Ave. NW
Washington, DC 20036

Patricia Cancellier

Conducts a population education program which prepares and distributes materials on population topics for classroom use; works with educational organizations to make information available through publications and workshops; publishes *Interchange*, the population education newsletter accompanied by teaching materials; conducts teacher training workshops, maintains population and environment film library; offers assistance in incorporating population topics into school curricula.

URBAN LAND INSTITUTE

1200 18th St. NW
Washington, DC 20036

Joseph Stellar, Jr.

An independent, non-profit educational and research organization, incorporated in 1936 to improve the quality and standards of land use and development; publishes books (i.e. *Management and Control of Growth Series, Community Builders Handbook Series, Water Resources Protection Technology, Streetscape Source Book*, and others) and periodicals (i.e. *Urban Land* and *Environmental Comment).*

The American Institute of Architects
The Sourcebook

If you want to join the informational network of The Sourcebook *please complete a reply card contained in this section, or a facsimile of the card, or write directly to Alan Sandler, Public Education, The American Institute of Architects, 1735 New York Avenue, NW, Washington, DC 20006-5292.*

Name:

Affiliation:

Address:

Phone:

I recommend the following EE resources for addition to *The Sourcebook:* (title, author)

I recommend the following as a model program: (name and address of program)

Please list me as a resource person in your network with the following information:

Activity/Program Name:

Description:

Materials/Resources/Services Available:

Size and Location of Service Area:

Cut along dotted line, fold, tape, and mail.

Name:

Affiliation:

Address:

Phone:

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Environmental Education
The American Institute of Architects
1735 New York Avenue NW
Washington, DC 20006-5292

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The American Institute of Architects
1735 New York Avenue NW
Washington, DC 20006-5292

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Name:
Affiliation:
Address:

Phone:

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Washington, DC 20006-5292

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